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The Editorial Office and the Advertisement and the Accounts Sections of the Journal of the Indian Medical Association have been removed to 53, Creek Row, Calcutta 14 from March 1961. The Circulation Section dealing with despatch of Journals, however, continues to remain at the old office at 23, Samavaya Mansions, Calcutta 13.

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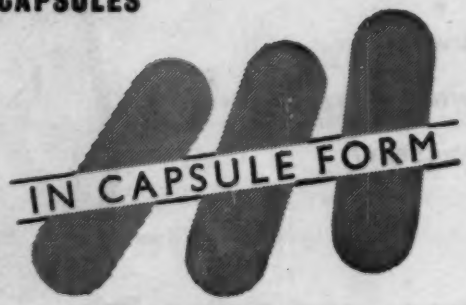

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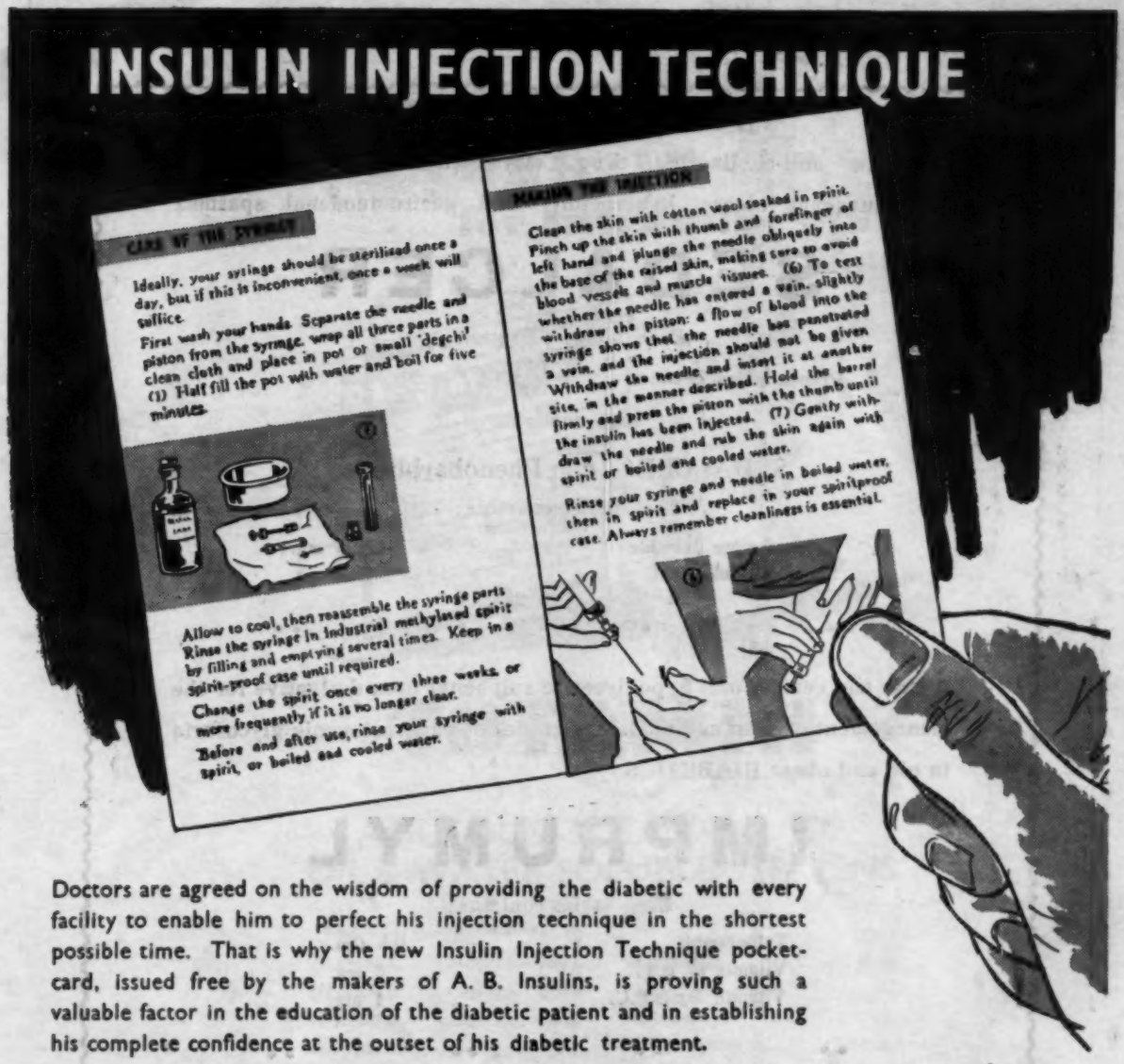
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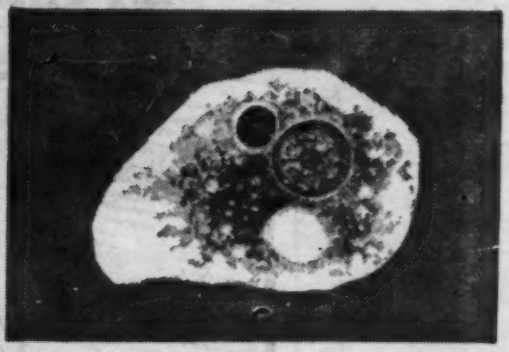

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1 Sodeman, W.A., and Beaver, P. C. : *Am. Jour. Med., 12 : 440*, Apr., 1952
2 Zavala, D. C., and Hamilton, H. E. : *Ann. Int. Med., 36 : 110*, Jan., 1952
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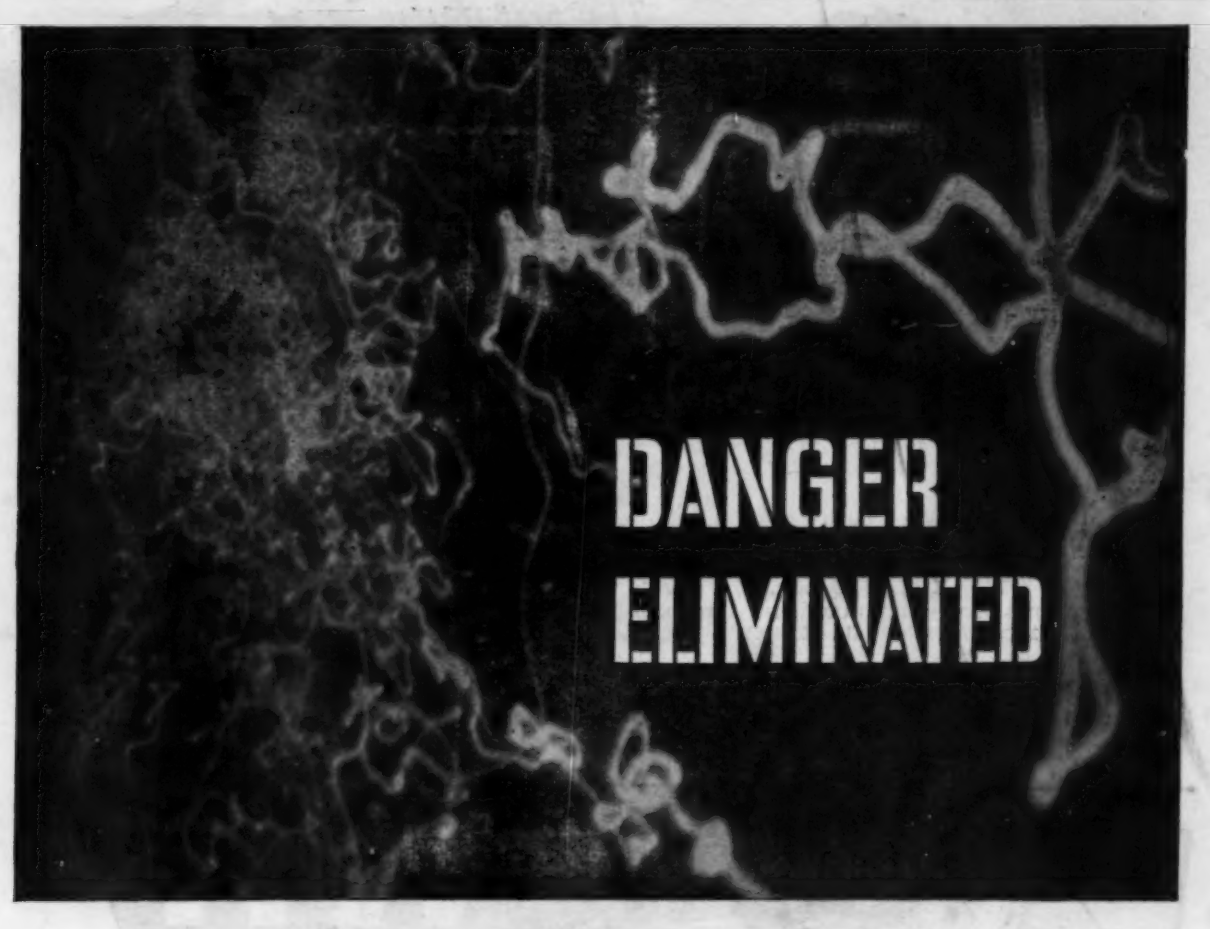

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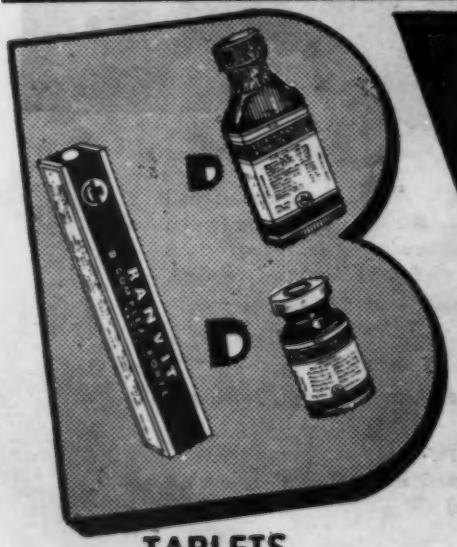

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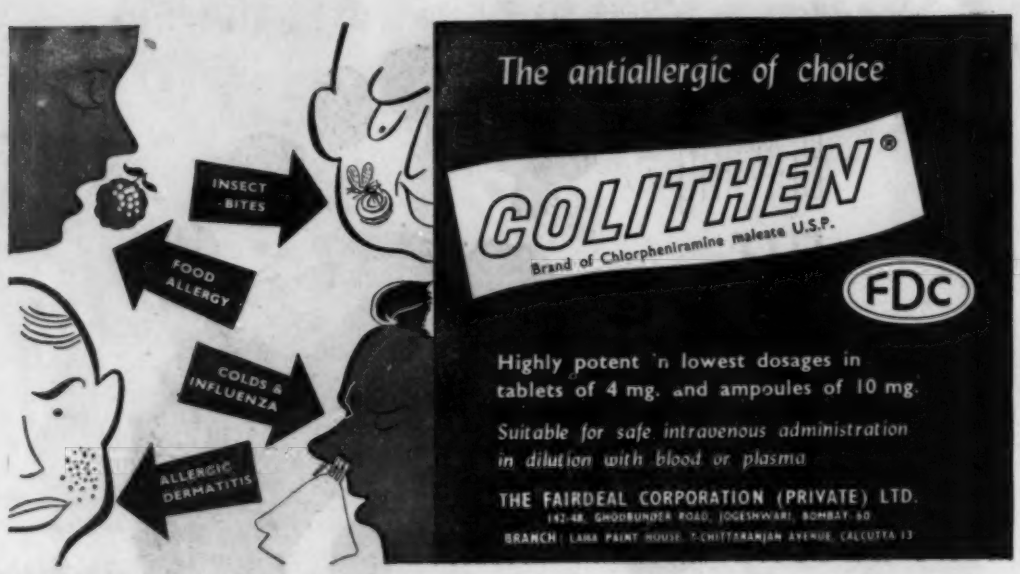
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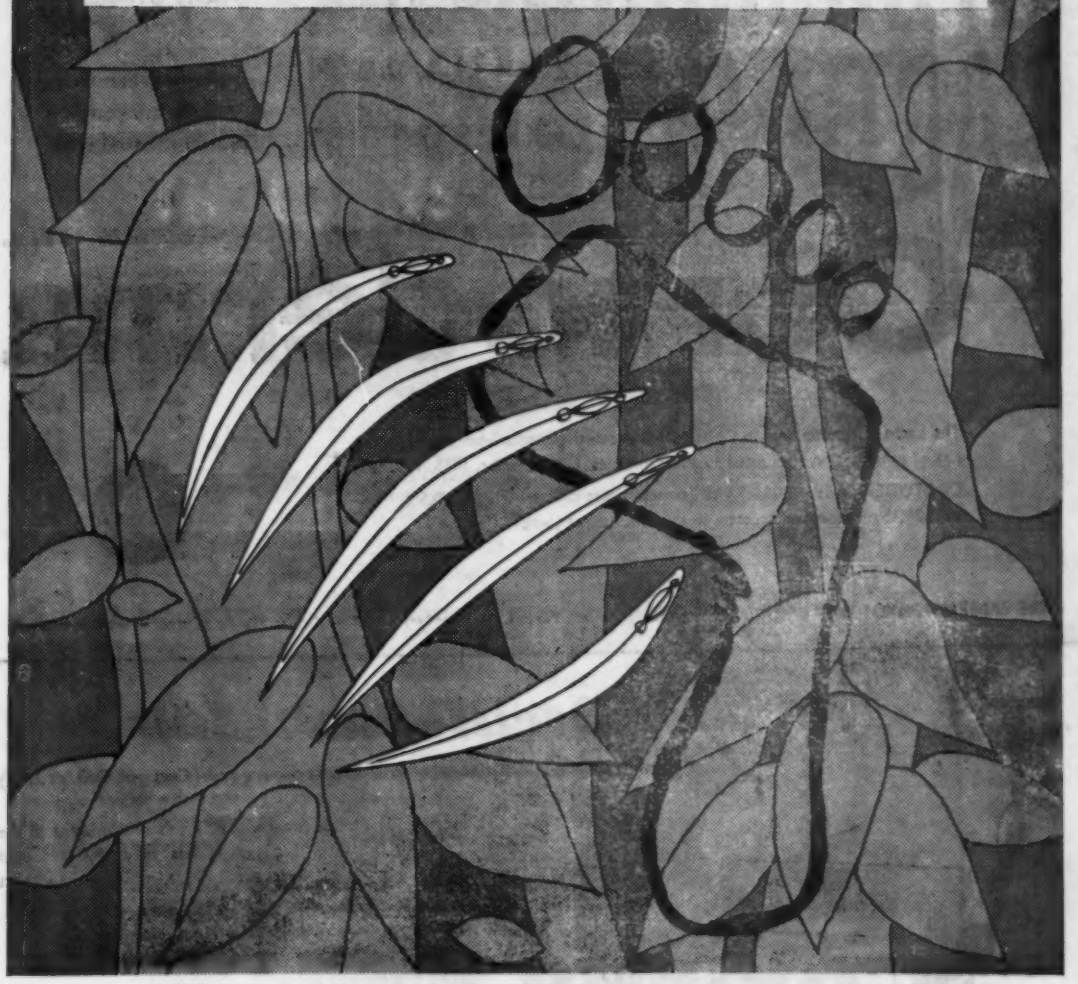

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ORIGINAL ARTICLES

ACTION OF ISMELIN ON FINKLEMAN PREPARATION OF RABBIT ILEUM

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INTRODUCTION

Choline 2 : 6 xylyl ether bromide (M 10) was detected to block the effects of stimulation of the sympathetic nerves, without any anti-adrenaline and anti-noradrenaline action (Hey and Willey, 1954 ; Bain and Fielden, 1956 ; Exley, 1957). Bretylium tosylate was found to have similar effects (Boura and Green, 1959). Recently ismelin [2-(octahydro-1-azocinyl) ethyl]-guanidine sulphate, has been found to have a prolonged hypotensive activity, without any ganglion blocking, or anti-adrenaline action (Mull *et al*, 1957 ; Maxwell *et al*, 1958a, b). It was considered worthwhile to investigate the action of ismelin on the sympathetic nerve transmission in the Finkleman preparation of rabbit ileum.

MATERIAL AND METHODS

The preparation has been described by Finkleman (1930). The rabbit was killed by a blow on the head, and the carotid arteries were severed with a pair of sharp scissors, and the animal bled to death. The freshly killed rabbit was laid on a tray and the abdomen was opened. The contents of about 5 cm. of ileum, with a mobile mesenteric attachment, were gently squeezed to either side. The piece of ileum was separated by two transverse cuts, in between white cotton thread ligatures, and the cuts were continued along the mesentery on each of the blood vessels supplying the part for about 8 cm. The mesentery was then cut across, and the preparation was transferred to a receptacle containing Tyrode solution at 36°C. From a good sized rabbit, it was possible to obtain 3 separate pieces from the ileum and the jejunum, and one from the duodenum, which in the rabbit has a separate mesentery of its own.

For convenience of manipulation and identification, a length of coloured cotton thread was attached to the cut end of the mesentery. A loop was prepared with the thread at one end of the ileum, and to the other end was tied a length of thread which was connected to the writing lever. The latter had a frontal glass writing point which recorded the contractions on a slowly moving smoked drum. The preparation was transferred to an isolated organ bath containing Tyrode solution at 36°C. The loop was hooked round the curved end of a fixed glass rod dipping inside the bath, and the thread was attached to the recording lever. Air was bubbled through the Tyrode solution in a thin jet. The preparation worked satisfactorily, and for hours.

When the muscle was executing uniform and regular rhythmic contractions, the cut end of the mesentery was gently pulled off the bath and laid across the curved tips of silver chloride electrodes embedded in perspex glass. Care was taken to avoid stretching the mesentery. The negative electrode was placed nearer the tissues.

For the purposes of stimulation of the mesentery (and its contained nerves), an electronic square wave stimulator was used. The rate of stimulation was 60 per second, each stimulus of 0·5 millisecond duration, supramaximal voltage being used throughout. The nerves were stimulated for 30 seconds or 45 seconds every 10 minutes.

On stimulation, rhythmic contractions ceased in the ileum preparation, and there was relaxation

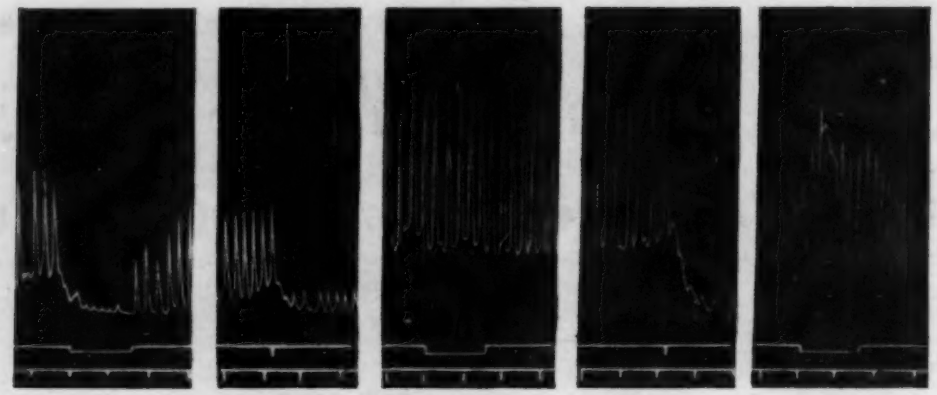

FIG. 1—SHOWING THE EFFECTS OF DIFFERENT PREPARATIONS ON THE FINKLEMAN PREPARATION OF RABBIT ILEUM. MESENTERIC NERVES STIMULATED FOR 45 SECONDS (THICK LINES)

The effects of stimulation (A), and (0·1 μg/ml.) noradrenaline (B). Ismelin, 0·5 μg/ml., completely blocked inhibitory effects of stimulation after 20 minutes (C). The action of noradrenaline (0·1 μg/ml.) is not impaired 25 minutes after the addition of ismelin (D). Bath washed out at 26 minutes. Atropine-sensitive motor effects appear 40 minutes after addition of ismelin to the bath (E). Time=20 seconds.

from the duodenum. Relaxation of tone was rarely observed in the ileum preparations as they seldom had any marked tonus to start with. On cessation of stimulation, the rhythmic contractions (as well as tonus in duodenum preparations) returned in a step ladder fashion. The effects were due to stimulation of sympathetic nerves in the mesentery, which are the only effects obtainable under these experimental conditions.

On addition of suitable amounts of adrenaline and noradrenaline to the bath, the rhythmic contractions ceased, and they revived when the bath was washed out. Very similar tracings of sympathetic nerve stimulation, and noradrenaline in the bath fluid could be obtained.

In this preparation drugs which have a sympathetic nerve blocking action abolish the effects of electrical stimulation of mesenteric nerves without interfering with effects of noradrenaline or adrenaline added to the bath fluid.

Solutions used—(1) Noradrenaline (levophed bitartrate monohydrate) 100 μg./ml in saline. Solution kept icecold throughout the experiment. (2) Ismelin stock solution 1 mg./ml. in distilled water. From this, fresh solutions were made so that the volume added to the bath (capacity 100 ml.) did not exceed 0·5 ml. (3) Atropine sulphate 1 mg./ml. in distilled water.

OBSERVATIONS

Initial experiments showed that ismelin 10 μg./ml. in bath fluid completely blocked the sympathetic nerves in 10 minutes. This concentration of ismelin had a depressant effect on the movements of intestine, but it recovered. The nerve recovered after the bath was washed out several time (8-10) at 10 minutes intervals. In each wash out 200 ml. of Tyrode solution (36°C) was used. The experiments were repeated with weaker concentrations of ismelin in the bath fluid, and 0·5 μg/ml. was sufficient to block the nerves in 30 minutes. Concentrations below 0·3 μg./ml. were ineffective, or produced a partial block. Noradrenaline, added to the bath fluid, was effective even when the nerves were completely blocked by ismelin. Thus the drug is a sympathetic-nerve blocking agent without any anti-sympathomimetic effect. In some preparations (Fig. 1) after the sympathetic nerves were completely blocked by ismelin, stimulation of the mesenteric nerves produced a motor effect on the intestinal movements. This was prevented by atropine, and was, presumably, due to stimulation of parasympathetic nerves in the mesentery, an effect which could only appear when the sympathetic nerves were completely blocked. In the absence of any drug in the bath fluid it was never possible to demonstrate any parasympathetic effect with any type of stimulus.

There is some confusion regarding nomenclature of compounds which prevent the actions of adrenaline and noradrenaline by their effect on the receptors, and those which block the effects of stimulation of sympathetic nerves. Thus terms like adrenergic-nerve blocking agents (though the

nerve endings actually liberate noradrenaline), sympatholytic compounds (though no lysis occurs), adrenergic-blocking agents, etc., have been used. The terms sympathetic-nerve blocking agents, and anti-sympathomimetic compounds will help to clear up the confusion, the former acting by preventing the liberation of the transmitter, the latter by blocking the sympathetic autonomic effector cells in the tissues.

ACKNOWLEDGMENTS

We are indebted to Ciba Ltd., Basle, for supply of Ismelin.

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THE SIGNIFICANCE OF THE 'OTHER' LARYNGEAL NERVES IN THYROID SURGERY

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In any discussion on surgery of the thyroid, the recurrent laryngeal nerve always figures prominently and rightly so. Every surgeon dealing with thyroid surgery exercises sufficient skill and care to avoid injury to the recurrent laryngeal nerve. Under the overwhelming importance that the recurrent laryngeal nerve commands, the importance of other laryngeal nerves dwindles to nothingness. This is hardly justifiable. What is less commonly realised but should be more widely known are the ways and means to avoid trauma to to the superior laryngeal nerve and its branches during thyroid surgery. The disabilities that follow injury to the superior laryngeal nerve or its branches during thyroid surgery, still remain theoretical to many.

The superior laryngeal nerve, a branch of the vagus, breaks up into two divisions: (1) the internal laryngeal nerve, which is entirely sensory to the larynx up to the vocal folds, and (2) the external laryngeal nerve, which accompanies the superior thyroid artery and is motor to the cricothyroid muscle, besides supplying a few fibres to the inferior constrictor of the pharynx.

In almost every type of thyroid surgery ligation of the superior thyroid pedicle is an important step. The surgical teaching is that in order to avoid injury to the external laryngeal nerve (which courses along with the superior thyroid vessels) the upper pole of the thyroid should be included in the ligature thus avoiding inclusion of the nerve which turns medially half a centimetre above the pole to enter the cricothyroid muscle (Fig. 1). This it is felt is a mistake.

By careful dissection, both blunt and sharp, with a peanut (gauze) on a Kocher's forceps one can always push the nerve up to a safe position (Fig. 2). In almost every case, it is possible to demonstrate this nerve separately from the superior thyroid vessels, which can then be ligated distal to the point where the nerve leaves the vessels and proximal to the superior thyroid pole.

It is sad that surgical trauma to this nerve is all too common. The effects of injury happen to be transient and hence continue to be ignored. A disquieting and distressing weakness of the voice and some hoarseness are frequently observed after a clean thyroid operation. The surgeon as well as the patient start wondering as to its cause. Although the vocal cords are seen to move well after the operation, we still notice the hoarseness! The fault is often wrongly attributed to the anaesthetist for inexpert intubation. The patient continues to have pain, and a whispering and weak voice for a number of months, until compensation and regeneration of the nerve brings the voice back to its normal state. A bilateral injury to this nerve is not uncommon in the hands of an unwary surgeon. The morbidity of such patients demands that more than usual attention is necessary to avoid injury to this structure.

In all but the very large colloid or adenomatous enlargement of the thyroid, the internal laryngeal nerve is safe from surgical injury as it pierces along with the superior laryngeal vein and artery (a branch of the superior thyroid artery) the thyrohyoid membrane and gains the interior of the larynx. However, in large colloid goitre the internal laryngeal nerve is not entirely immune

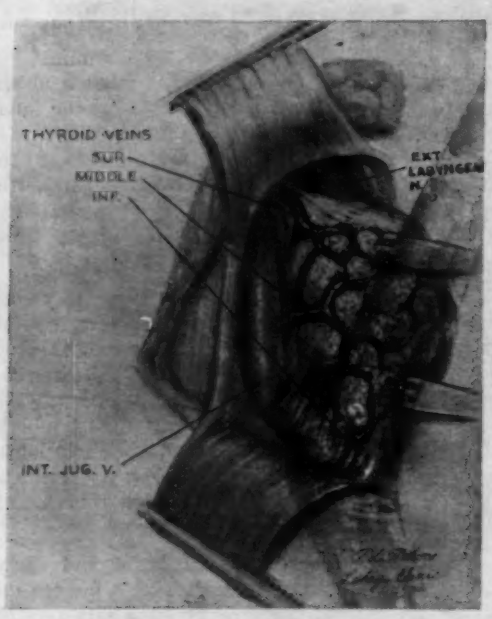

FIG. 1—A DISSECTION OF THE NECK SHOWING RELATION OF THE EXTERNAL LARYNGEAL NERVE TO THE SUPERIOR THYROID VESSELS AND THE THYROID GLAND (DIAGRAMMATIC)

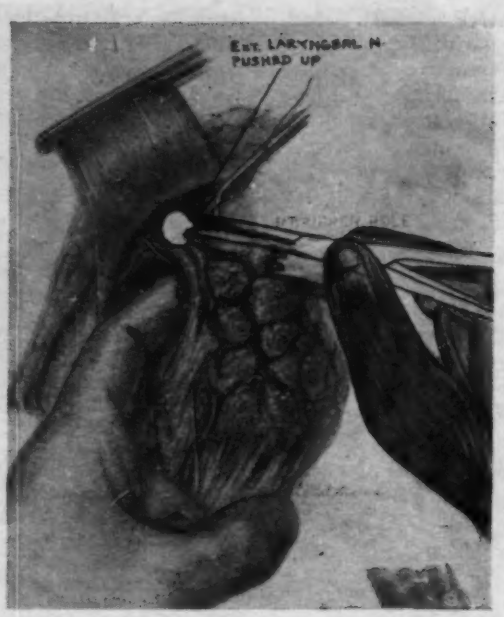

FIG. 2—A DISSECTION OF THE NECK SHOWING THE TECHNIQUE OF SEPARATING THE EXTERNAL LARYNGEAL NERVE FROM THE SUPERIOR THYROID VESSELS (DIAGRAMMATIC)

from injury. But with careful and patient dissection and by keeping the thyrohyoid membrane as a landmark, injury can always be avoided. The effects of injury to this nerve are even worse than those of injuries to the external laryngeal nerve. The loss of sensation over the laryngeal mucous membrane (up to the vocal folds) results in a distressing situation in which the feeds trickle down into the larynx and produce severe cough. Pooling of saliva, constant cough, severe aspiration pneumonitis and even lung abscesses result if the complication is not attended to with care. In some instances bilateral trauma to this nerve after excision of large goitres may result in such severe disturbances that a total extirpation of the larynx may become necessary (Martin, 1957). The best solution for this complication is the introduction of a nasogastric feeding tube, until the sensation has returned. Fortunately, this complication is also transient and the sensation returns slowly but surely over a period of months.

It is imperative, therefore, that the external laryngeal nerve, and, in large thyroid swellings, the internal laryngeal nerve should receive more than usual attention if post-operative morbidity and distress are to be avoided. The step-motherly attitude to the 'other' laryngeal nerves is unjustifiable. Indeed, it has truly been said, "that reputations have been made and lost by surgeons in surgery of the thyroid".

SUMMARY AND CONCLUSIONS

The external and internal laryngeal nerves should be carefully avoided from trauma during thyroid surgery. The ways for avoiding this injury are outlined and the surgical technique depicted. The distressing features of such injuries and the ways to manage them are stated.

Every surgeon who has to deal with thyroid surgery should exercise equal care to protect the 'other' laryngeal nerves as much as the recurrent laryngeal nerve.

ACKNOWLEDGMENT

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CARBAZOCHROME SALICYLATE IN THE TREATMENT OF PULMONARY HAEMORRHAGE

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Pulmonary haemorrhage is a symptom which needs immediate attention and treatment even before the diagnosis can be made. The course of haemorrhage is often unpredictable. The commonest cause, however, in our country is pulmonary tuberculosis.

Various drugs are used as immediate form of treatment to check the haemorrhage. The drugs so used do not act specifically. The correct treatment is to tackle its cause, whether tuberculous or non-tuberculous. Calcium preparations, vitamin C, vitamin K, coagulen, congo red, etc., are the time-honoured drugs that are in use. Thrombokinase preparations made from animal tissue are very popular (clauden is made from animal lung tissue). The mode of action of these drugs is by their effect on bleeding and clotting times. If bleeding and clotting times are tested in cases of pulmonary haemorrhage, most cases do not show any alteration. It is therefore difficult to understand how these drugs are useful.

Recently a new haemostatic agent has been available. It is carbazochrome salicylate (stadren), chemically known as adrenochrome monosemicarbazone. It is an oxidation product of adrenaline. It has no action on the autonomic nervous system, pulse rate, blood pressure, bleeding time and clotting time. It is rapidly absorbed when given orally or by intramuscular injection. Toxicity is absent. It acts by increasing the elastic tissue tone in the wall of the capillaries. This was proved experimentally in the check pouch of hamster when carbazochrome prevented haemorrhage in spite of snake venom. The drug maintains normal capillary permeability and promotes capillary retraction. It has no vasoconstrictor action. Thus it is useful in all conditions characterised by haemorrhagic diathesis.

This paper deals with the action of carbazochrome salicylate in pulmonary haemorrhage only.

Material and Methods

All the cases were admitted to the tuberculosis department of the Civil Hospital, Ahmedabad. A detailed history regarding the duration and severity of haemoptysis was recorded. The following four schedules of drugs were administered at random, and no selection was made for any particular schedule. The schedules were:

1. A_1 = Clauden alone.
2. A_2 = Clauden and coagulants like calcium gluconate, vitamin C and vitamin K.
3. B_1 = Stadren alone.
4. B_2 = Stadren and coagulants like calcium gluconate, vitamin C and vitamin K.

Clauden was administered in doses of 10 ml. intravenously, daily, and stadren was administered in doses of 2 ml. intramuscularly, daily.

The purpose of using the various drug schedules was to form a comparative idea as to the usefulness of the drugs. The cases were followed daily and the severity of haemoptysis and the colour and quantity of blood were noted. Bright red colour was taken as fresh haemoptysis, while dark coffee colour was taken as old blood. Haemoptysis was considered to have stopped when fresh or any blood was absent. In a few cases additional measures like blood transfusion and pneumoperitoneum were employed when haemopty-

Table 1—Showing the Result of Treatment with Schedule A_1 (Clauden Alone) in 11 Cases

Case No.	Age (years) and sex	Radiological extent of disease	Haemoptysis: Severity	Haemoptysis: Duration before treatment (days)	Haemoptysis: Duration after treatment (days)	Remarks
4	20, M	4+	Moderate	4	2	
9	50, M	6+	Mild	4	30	Recurrence
11	50, M	6+	Moderate	2	2	
23	28, M	2+	,,	2	5	
25	25, M	3+	,,	2	5	
27	35, M	6+	Severe	2	7	
28	20, M	4+	Moderate	2	3	Pneumoperitoneum done
32	25, M	2+	,,	1	15	,,
33	28, M	4+	,,	4	3	
34	25, F	3+	,,	1	2	
39	32, M	2+	Mild	1	3	
		42+		25	77	
	Average	3·8+		2·2	7	

The numbers of mild, moderate and severe cases of haemoptysis were 2, 8 and 1 respectively, the corresponding average durations of haemoptysis after treatment being 16·5, 4·6 and 7 days.

TABLE 2—SHOWING THE RESULT OF TREATMENT WITH SCHEDULE A_2 [CLAUDEN+COAGULANTS (CALCIUM, VITAMIN C, VITAMIN K)] IN 11 CASES

Case No.	Age (years) and sex	Radiological extent of disease	Haemoptysis: Severity	Haemoptysis: Duration before treatment (days)	Haemoptysis: Duration after treatment (days)	Additional measures
1	23, M	6+	Moderate	2	1	
2	28, M	6+	,,	1	5	
3	40, M	4+	,,	10	10	
5	28, M	6+	,,	4	4	
6	36, M	1+	,,	Few hours	1	
7	32, M	3+	Severe	1	5	
13	35, M	2+	Mild	2	3	
15	30, M	2+	Moderate	11	11	Blood transfusion and pneumoperitoneum
16	36, M	2+	Severe	16	12	Pneumoperitoneum
19	47, M	2+	Moderate	3	4	
20	28, M	6+	Severe	15	6	(Recurrence) Pneumoperitoneum
		40+		66	62	
	Average	3·6+		6	5·6	

The numbers of mild, moderate and severe cases of haemoptysis were 1, 7 and 3 respectively, the corresponding average duration of haemoptysis after treatment being 3, 5·1 and 7·6 days.

sis became profuse and uncontrollable. In a small number of cases the bleeding and clotting times were estimated before and after the treatment, to observe the effect of the drugs. Later, sputum and radiological examinations were made to confirm the diagnosis. The total number of cases treated was 45 ; out of these, Case 10 did not get clauden or stadren and so was excluded and Case 14 left hospital against medical advice and was not included in the series. Thus the results were studied on 43 cases.

RESULTS

In the accompanying tables a detailed analysis of the cases studied under various drug schedules is given. Radiological extent is mentioned as 1+ to 6+. It is equivalent to one radiological zone, i.e., upper zone=area above the lower

TABLE 3—SHOWING THE RESULT OF TREATMENT WITH SCHEDULE B_1 (STADREN ALONE) IN 10 CASES

Case No.	Age (years) and sex	Radiological extent of disease	Haemoptysis: Severity	Haemoptysis: Duration before treatment (days)	Haemoptysis: Duration after treatment (days)	Remarks
22	23, M	2+	Moderate	1	4	
24	20, M	6+	,,	2	5	
26	25, M	3+	,,	1	5	
29	45, M	6+	,,	1	4	
30	40, M	4+	,,	1	7	
31	37, M	6+	,,	3	10	
35	20, M	4+	,,	1	1	
36	50, M	3+	Severe	3	3	Headache, bodyache, bradycardia (56/min.)
37	25, F	6+	,,	1	12	
38	25, M	6+	,,	3	7	
		46+		17	58	
	Average	4·6+		1·7	5·8	

The numbers of mild, moderate and severe cases of haemoptysis were nil, 7 and 3 respectively, the corresponding average durations of haemoptysis after treatment being nil, 5·1 and 7·3 days.

margin of anterior end of 2nd rib=1+. Thus 3 radiological zones on each side make a total of 6 zones. Mild haemoptysis is that where blood is present in traces. Severe haemoptysis is one where profuse and frank blood in bouts is noticed. The rest has been designated as moderate.

DISCUSSION

From the data presented the following conclusions may be drawn :

The average duration of haemoptysis was least with schedule B_2, i.e., stadren with coagulants (Table 5).

Whatever the severity of haemoptysis the average duration was least with B_2, i.e., stadren with coagulants (Table 6). Mild cases are not taken into consideration because of their small number.

The average duration of haemoptysis was least with stadren group (B_1+B_2) when the average radiological extent was considered. The average duration per unit zone was 1·41 days with B_1+B_2, i.e., stadren group, while it was 1·69 days with A_1+A_2, i.e., clauden group (Table 7).

TABLE 4—SHOWING RESULT OF TREATMENT WITH SCHEDULE B_2 [STADREN+COAGULANTS (CALCIUM, VITAMIN C, VITAMIN K)] IN 11 CASES

Case No.	Age (years) and sex	Haemoptysis: Radiological extent of disease	Haemoptysis: Severity	Haemoptysis: Duration before treatment (days)	Haemoptysis: Duration after treatment (days)	Additional measures
8	20, M	4+	Severe	5	4	Blood transfusion
12	32, M	6+	Moderate	2	4	
17	26, M	4+	Severe	2	7	
18	26, M	1+	Moderate	10	3	
21	40, M	4+	,,	2	6	Pneumoperitoneum and blood transfusion
40	50, M	2+	,,	2	3	
41	20, F	1+	,,	1	4	
42	32, M	4+	Mild	1	2	
43	24, M	3+	Moderate	1	3	
44	20, M	1+	Severe	2	10	Blood transfusion
45	28, M	3+	Mild	1	6	
		33+		29	52	
		Average 3+		2·8	4·7	

The numbers of mild, moderate and severe cases of haemoptysis were 2, 6 and 3 respectively, the corresponding average durations of haemoptysis after treatment being, 4, 3·8 and 7 days.

TABLE 5—SHOWING AVERAGE DURATION OF HAEMOPTYSIS AFTER VARIOUS SCHEDULES

Schedule	A_1	A_2	B_1	B_2
Days ...	7	5·6	5·8	4·7

TABLE 6—SHOWING RELATION BETWEEN TREATMENT SCHEDULE, SEVERITY OF HAEMOPTYSIS AND DURATION OF HAEMOPTYSIS AFTER TREATMENT (DAYS)

Haemoptysis	Schedules: A_1	A_2	B_1	B_2
Mild ...	16·5	3	nil	4
Moderate ...	4·6	5·1	5·1	3·8
Severe ...	7	7·6	7·3	7

TABLE 7—SHOWING RELATION BETWEEN AVERAGE RADIOLOGICAL EXTENT, TREATMENT SCHEDULE AND DURATION PER UNIT ZONE

Average duration per unit zone	Schedule	Average extent	Average duration (days)	Duration per unit zone
A_1+A_2	A_1	3·8+	7	1·84
=1·69	A_2	3·6+	5·6	1·55
B_1+B_2	B_1	4·6+	5·8	1·26
=1·41	B_2	3 +	4·7	1·56

TABLE 8—SHOWING AVERAGE DURATION OF HAEMOPTYSIS PER PATIENT

Total number of cases treated	43
Total duration of haemoptysis	249 days
Average duration of haemoptysis per patient	5·76 ,,

TABLE 9—SHOWING AVERAGE DURATION OF TREATMENT

Clauden cases (including coagulants)	$A_1+A_2=7+5·6=6·3$ days
Stadren cases (including coagulants)	$B_1+B_2=5·8+4·7=5·25$ days

TABLE 10—SHOWING AVERAGE DURATION OF TREATMENT

Cases treated without coagulants	$A_1+B_1=7+5·8=6·4$ days
Cases treated with coagulants	$A_2+B_2=5·6+4·7=5·1$ days

TABLE 11—SHOWING BLEEDING AND CLOTTING TIMES BEFORE AND AFTER TREATMENT

Case No.	Schedule	Bleeding time (minutes): Before treatment	Bleeding time (minutes): After treatment	Clotting time (minutes): Before treatment	Clotting time (minutes): After treatment
22	B_1	3·45	1·50	6·20	6·20
23	A_1	1·55	2·50	5·5	4·35
25	A_1	2·15	2·50	5·5	6·15
26	B_1	1·2	1·50	4·5	5·50
27	A_1	1·5	2·5	4·37	5·20
28	A_1	1·10	2·15	5·30	5·20
29	B_1	1·15	1·15	3·30	6·5
30	B_1	1·25	1·45	4·9	5·4
33	A_1	1·10	1·2	4·18	3·40
36	B_1	1·6	1·2	2·40	2·50
37	B_1	1·4	1·3	2·35	2·20
38	B_1	1·10	1·12	2·40	3·10

The average duration of haemoptysis per patient (all the patients taken together) was 5·76 days (Table 8). Here also B_2 had a duration of 4·7 days, i.e., less than the average.

The average duration was less with stadren cases, i.e., $B_1+B_2=5·25$ days, while it was 6·3 days (A_1+A_2) with clauden cases (Table 9).

Average duration of treatment was 6·4 days with coagulants. Thus coagulants such as calcium, vitamin C, vitamin K were of some value in checking haemorrhage (Table 10).

There were 2 cases of recurrence of haemoptysis with clauden group (A_1+A_2), while there were none with stadren group (B_1+B_2).

Additional measures like blood transfusion and pneumoperitoneum were used in 6 cases with clauden group (A_1+A_2) and in 4 cases with stadren group (B_1+B_2).

Two cases of allergic symptoms were noted with stadren while none were noted with clauden.

There was no appreciable effect on bleeding and clotting times either with stadren or clauden (Table 11).

It is thus evident that stadren is a drug which has proved superior, in the sense that the haemoptysis is checked earlier than other drugs irrespective of age, sex, severity of haemoptysis, radiological extent of disease, and a previous duration of haemoptysis. The previous reports that the drug has no action on B.P., pulse rate, bleeding and clotting times are confirmed. B.P. and pulse rate were also checked before and after treatment and no change was noted. The drug is practically non-toxic as seen by only 2 cases out of 21 having allergic reactions. The drug is easier to administer and so can be given by the nurse even before the doctor's arrival.

The number of cases on which the trials were carried out is small and more extensive trials are necessary before any definite conclusions can be reached. Stadren is not a master drug which can solve the problem of controlling haemorrhage. Additional measures like blood transfusion, pneumothorax or pneumoperitoneum or surgical intervention must be used as and when necessary. The drug, however, shows promising results. If stadren is used alone with coagulants, many haemorrhages could be controlled earlier and the drug may even be life-saving.

Summary

Forty-three cases were studied with various schedules, A_1, A_2, B_1, and B_2.

The average duration of haemoptysis was least with schedule B_2, i.e., stadren + coagulants irrespective of the severity of haemoptysis and radiological extent of disease.

Addition of coagulants like calcium, vitamin C and vitamin K definitely lessens the average duration of haemoptysis.

Stadren is practically non-toxic.

Stadren has no action on blood pressure, pulse rate, bleeding time and clotting time.

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ACUTE COPPER SULPHATE POISONING

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Cases of acute copper sulphate poisoning often turn up in general hospitals for treatment. The patients usually ingest easily procurable copper sulphate for suicidal purpose, although they rarely succeed in their attempts. Copper sulphate is taken in the form of a lump, powder, or paste with other materials, or sometimes as a drink. The exact quantity ingested can rarely be ascertained, as the patient's relatives either do not know its exact weight or would not like to disclose it for obvious reasons. The signs and symptoms of poisoning vary from minimal to severe degrees and these are described in standard text books of forensic medicine where a reference is made to jaundice (Modi, 1959) in some of the cases.

In the present investigation attention is drawn to the serum copper level, jaundice, haemolysis and transient glycosuria without hyperglycaemia in some of the cases of acute copper sulphate poisoning. Liver function tests were carried out and during investigations we often noticed haemolysis in the samples of blood collected for the above purpose, particularly in severe cases of poisoning. Haemolysis, haemoglobinuria and port-wine urine had also been seen in this series, and it is of interest to note that Goldberg *et al*

(1956) referred to the less recognised haemolytic anaemia in copper sulphate poisoning. The cause of jaundice has been discussed and a brief reference has also been made to the treatment given, including administration of BAL and exchange transfusion.

Materials and Methods

Twenty cases of acute copper sulphate poisoning were admitted mostly soon after the ingestion of the substance and samples of blood were taken for investigation as early as possible on the same day or soon after. When necessary, further samples were taken for follow-up. Erythrocyte fragility tests and urine examinations were also carried out. Blood sugar was estimated when necessary, using the standard procedure. Liver function tests and serum copper estimations were done according to the following procedures.

Serum proteins were estimated by biuret method of Wolfson *et al* (1948) using Weichselbaum's (1946) biuret reagent. The colour was measured in a photo-colorimeter at 530 mμ. This method was first standardised against the standard Kjeldahl distillation method. The fractionation of proteins into albumin and globulin was carried out by Howe's (1921) procedure using 22·2 per cent sodium sulphate.

Thymol turbidity test—Maclagan's (1944) method was followed and the turbidity was measured in a photo-colorimeter at 650 mμ. The unit calculated was based on the chemical standard of Shank and Hoagland (1946).

Serum alkaline phosphatase—The methods of King and Armstrong (1934) and King *et al* (1937, 1942) in which disodium phenyl phosphate was hydrolysed with liberation of phenol and formation of sodium phosphate, were followed. Phenol was estimated photocolorimetrically at 650 mμ.

Van den Bergh test—Serum was treated with diazotised sulphanilic acid. Bilirubin present reacted to form coloured compounds, e.g., azorubin and azobilirubin. The reaction consisted of two parts, the direct and indirect reactions, the first being the qualitative one. From the diazotised solution the proteins were precipitated with saturated ammonium sulphate and ethyl alcohol following the procedure of King and Coxon (1950) and the reading of the resultant coloured solution was measured photocolorimetrically at 520 mμ. The results were calculated from the curve prepared in the same way from the known amounts of bilirubin. It is to be noted that the room temperature at which the reaction was carried out was much higher in our place, which probably affected the serum bilirubin values, particularly in summer.

Serum copper level was estimated from blood serum following the method of Cartwright *et al* (1945). This method is based on the fact that approximately 75 per cent of copper contained in serum is present in filtrates prepared by precipitation of the serum with trichloracetic acid. Three warm extractions of the trichloracetic acid precipitate remove approximately 97 per cent of the copper. Based on the above, a triple warm extraction of a trichloracetic acid precipitate of the serum was followed by photocolorimetric determination of copper with sodium diethyldithiocarbamate.

Observations

Twenty cases of acute copper sulphate poisoning were investigated over a period of years of which 6 were mild, 9 moderate and 5 severe. Mild cases were those who complained of a metallic taste in the mouth, slight pain and tenderness over the epigastric region and sometimes nausea. Moderate cases had in addition to the above, retrosternal burning sensation, vomiting, tachycardia, low blood pressure, tender liver, scanty urine with albumin and sometimes blood. In severe cases, all the above signs and symptoms were present but they were more acute. These patients complained of severe tenderness, persistent tachycardia, falling blood pressure, bluish or greenish loose stools often with blood, urine with blood, albumin and sometimes sugar. Soon jaundice developed, and some of the patients became restless and apathetic with a toxic look or became stuporose and developed muscular weakness. In this series no death was recorded (Table 1).

It was observed that acute poisoning was slightly more common in women than in men (12 : 8) and the age of the sixteen patients varied between ten and thirty years. The quantity of copper sulphate ingested was rather a guess, as it could not be ascertained from most of the patients or their relatives. It might have been anything between a few grains to four and a half ounces. In order to solve this problem, thirteen estimations of copper in serum were made in the later cases in this series. Their range was between 132 μg. and 510 μg. per cent. The estimated values of the normal controls (5 estimations) were between 125 and 130 μg. per cent. From the serum copper estimations, an idea of copper absorption was made. A reddish tinge noticed in many of the blood samples was confused for increased bilirubin but this was actually due to increased copper.

TABLE 1—SHOWING DETAILS OF THE CASES AND INVESTIGATIONS INCLUDING SERUM COPPER LEVEL. ALL THE CASES WERE CURED

Case No.	Sex, age (yrs.)	Clinical types	Quantity of copper sulphate (approx.)	Days of ingestion	Liver function tests							Haemolysis, jaundice. Blood sugar (B.S.)	Erythrocyte fragility	Urine	Serum copper level (μg. %)	Treatment with BAL (250 mg./amp.)
					Total protein (g./100 ml.)	Albumin (g./100 ml.)	Globulin (g./100 ml.)	Thymol turbidity (units)	van den Bergh: Direct	van den Bergh: Indirect (mg.%)	Alkaline phosphatase (K-A units)					
1	F 25	Mild	Small lump	3	6·8	4·6	2·2	3	Neg.	0·2	12					
2	M 22	Moderate	Small lump	3	6·1	3·0	3·1	12	Delayed positive	1·2	16	Jaundice				
3	F 25	Severe	Paste of a lump with mustard oil	2	Serum haemolysed							Haemolysis, jaundice		Alb. RBC		BAL four hourly
4	F 47	Moderate	Small lump	2 4	6·4	3·1	3·3	16	Neg.	0·2	12		0·54%—0	Alb. RBC		BAL six hourly
5	M 40	Moderate	2 tea-spoonfuls	3 4 5 9 14	Haemolysis 7·2	3·5	3·7	10	Immediate positive	2·6	11	Jaundice, haemolysis No jaundice		Haematuria "		BAL six hourly
					6·0	3·2	2·8	9	Neg.	0·05	11					
6	F 25	Moderate	1 table spoonful	2	Serum haemolysed							Haemolysis, jaundice				
7	F 35	Severe	½ oz.	1 6 8 12	Serum haemolysed 5·8	2·9	2·9	11	Neg.	0·4	21	Haemolysis, jaundice No jaundice		Alb. RBC Portwine Sugar ++ Few RBC		BAL 2 amp. six hourly
8	M 23	Moderate	20 gr. ?	2 5 7								Jaundice No jaundice	0·54%—0	Alb. sugar +		BAL four hourly
9	M 20	Moderate	Small lump	2	5·84	3·1	2·74	10	Neg.	0·3	20	Haemolysis				
10	F 14	Mild	10 gr.	3 4	Serum slightly haemolysed. Haemolysis—mild				Tinge of copper Delayed positive	Icteric index–12		Haemolysis		Alb.		BAL four hourly
11	F 19	Severe	160 gr.	2 3 6	6·14	3·25 Haemolysis	2·89	12	Delayed positive	2·4		Haemolysis " " B.S.—118 mg./100 ml.	0·54%—0	Alb. RBC Sugar—trace Port-wine urine (0·14 mcg. cu in 12 mg. dried residue from centrifuged deposit)	510	BAL four hourly Blood six bottles of 280 c.c. each —exchange transfusion

12	F 19	Severe	Drink of copper sulph.	1	5·85	2·7	3·15	16	Delayed positive	1·2	25	Haemolysis, jaundice		260 (average of three normal —130)	BAL four hourly
				3		Serum haemolysed									
13	M 14	Moderate	Two lumps	2	5·94	3·5	2·44	6	Neg.	0·2	16		All samples haemolysed	132 (normal control 125)	BAL six amps.
14	M 14	Mild	Small lump	2	6·62	3·95	2·67	4	Neg.	0·05	14			200 (normal control 130)	
15	F 20	Mild	15 gr. ?	1	6·24	3·8	2·44	6	Neg.	0·1	13	Haemolysis slight	0·45%—0	158	
16	M 20	Mild	10 gr. ?	2	6·56	3·4	3·16	10	Neg.	0·2	16			240	
				3	6·24	3·3	2·94	10	Neg.	0·2	18			200	
17	F 30	Severe	4½ oz.	1	7·65	4·14	3·51	6	Neg.	0·08	14				
				2									Alb. RBC sugar +	280	BAL six hourly
				4	7·38	3·65	3·73	10	Immediate positive	1·6	15			260	
				6		Haemolysis						Haemolysis, jaundice	Sugar+		
				7								B.S.—82 mg./100 ml.	Sugar+		
				10									Sugar—nil	150	BAL eight hourly, total 34 amps.
				15	7·25	3·80	3·45	9	Neg.	0·64	14	No jaundice			
18	F 30	Moderate	2 dr.	1											
				2	6·14	3·86	2·28	6	Neg.	0·1	15		Alb. Sugar—trace	250	BAL four hourly
				3									Sugar—nil		
19	F 28	Moderate	1 dr.	1	5·92	3·1	2·82	8	Positive biphasic	1·3	13	B.S.—92 mg./100 ml.		230	BAL six hourly
				2								Jaundice—mild	0·45%—0		Patient left hospital on risk bond apparently well
20	M 32	Mild	1 dr.	1	6·18	3·20	2·98	9	Neg.	0·2	18			190	

N.B.—Bluish stool in bed on the 2nd day of ingestion of copper sulphate in Case 17.

Liver function tests were carried out mostly within 3 days in all the cases except in three where the tests could not be performed on account of marked haemolysis of the blood samples drawn for the above study. Haemolysis in varying degrees was also noticed in ten samples out of fourteen of the moderate and severe cases. If the blood samples were kept for a longer time progressive haemolysis was seen in many of the samples, though the fragility of the erythrocytes, except in severe cases, was, not much altered when suspended in different strengths of saline as is done in routine fragility tests. In three severe cases it went upto 0·54 per cent saline, and in another all the samples were haemolysed.

Jaundice was present in ten cases. van den Bergh test was negative only in ten cases, delayed positive in four, transient immediate positive in two cases and biphasic in one, but in the above eleven severer cases, negative tests only were seen in five, whereas it was delayed positive in three, immediate positive in two and biphasic in one. The range of serum bilirubin was between 0·05 and 2·6 mg. per cent, the lower figures being mostly confined to milder cases and in severe cases it was between 0·2 and 2·6 mg. per cent except in one. Out of the eleven severer cases where the liver function tests could be carried out, nine cases showed a diminution of total protein which was between 5·8 and 6·14 g./100 ml. and one showed 7·2 g./100 ml. initially, but it came down to 6 g./100 ml. in nine days. The above cases showed a tendency to reversal of albumin/globulin ratio. Thymol turbidity units increased to 6-16 units in the above cases. The serum alkaline phosphatase was between 11 and 25 King-Armstrong units and it was between 15 and 25 K-A units in seven of the severer cases. Albumin and red blood cells were present in urine in most and sugar in five of the severer cases. In two cases of glycosuria, the blood sugar was within normal limits. Port-wine urine was present in two severe cases where blood samples were also found haemolysed during the most acute phase and one of these cases was saved by BAL therapy and exchange transfusion.

Discussion

A correlation of the signs and symptoms of poisoning with the amount of copper sulphate ingested appeared to us necessary but as the information about the quantity ingested was inadequate or unreliable, we had to take recourse to serum copper estimation in the later cases of our series. Thus, Case 11 gave the ingested dose as 160 gr. but her serum copper was 510 μg. per cent whereas in Case 17 the ingested amount was stated to be 4½ oz. but her serum copper was 280 μg. per cent only. This discrepancy can, however, be explained by difference in absorption from the intestines. Other local factors may play some part as well. Wyllie (1957) reported copper poisoning symptoms with as little as 5·3 - 32 mg. of copper which was precipitated by ingestion of alcohol in an empty stomach. From our control study of the few cases (five determinations), it appeared that the normal serum copper level was rather on the higher side in local inhabitants, being 125 to 130 μg. per cent. In some of our cases (thirteen determinations in ten cases) we found the value varying from 132 to 510 μg. per cent. In three severe cases it was between 260 and 510 μg. per cent, where varying degrees of haemolysis and jaundice were also observed. It appears that the haemolytic reaction in cases with serum copper level above 260 μg. per cent contributed to the development of jaundice. Further, when the blood samples and centrifuged urine samples of these cases were kept for sometime, bluish deposits could be observed sticking to the sides of the test tubes, which on chemical analysis indicated the presence of copper derivatives.

The nature of jaundice that we have referred to in our cases is ill understood (Goldberg *et al*, 1956). When a sample of blood was kept for investigation for liver function tests, varying degrees of haemolysis were soon observed in many of the severer cases, but erythrocyte fragility tests with different strengths of saline did not reveal significantly increased fragility in all such cases. Hence the blood samples were examined as quickly as possible. In some of the severest cases, blood samples drawn for the above study were found already haemolysed, partly or completely, and naturally our attention was drawn to the haemolytic anaemia and haemolytic jaundice in such cases. The direct van den Bergh reaction indicated that there were more delayed positive cases in the severer group than in the milder cases of poisoning and only in one case it was biphasic. In two severer cases it was immediate positive for a short period suggesting transient obstruction to bile flow. Serum bilirubin in one case went up to 2·6 mg. per cent. According to Hawk *et al* (1954), in normal plasma serum bilirubin value lies between 0·1 and 0·25 mg./100 ml., and low values may be seen in secondary anaemia. King (1951), however, points out that there is no generally accepted range of normal values. We often noted that the serum bilirubin values were much lower than what we expected, but this unexpected feature was not uniformly seen throughout the year. The above discrepancy has been explained

by Nath *et al* (1960) to be due to higher temperature at which diazotization is carried out. They have shown that at a higher temperature diazotization is hampered wholly or partly and this accounts for low values for bilirubin. Thus, it seems probable that serum bilirubin figures might have been much higher if the temperature of the reaction was controlled.

It was also observed in moderate and severe cases that there was a tendency to diminution of total proteins with reversal of albumin/globulin ratio, the values of total proteins being 5·8-6·4 g./100 ml., as against normal values 6·3-8·2 g./100 ml. (Bayliss, 1954). From all available information, it appears that cases of liver disease were not included in the present series and it may possibly be inferred that acute copper sulphate poisoning produces hepatocellular dysfunction leading to the changes stated above. This view was further strengthened by the finding of higher values of thymol turbidity units in this series—the normal range being 0 to 4 units (Bayliss, 1954). Serum alkaline phosphatase was also higher in the more severe cases though it did not exceed 25 K-A units—the normal being 3 to 13 K-A units per 100 ml. (Bayliss, 1954). Thus, the hyperbilirubinaemia in the more severe cases may be interpreted in the light of the above findings to be partly due to hepatocellular damage and/or temporary obstruction to bile flow. We may mention here that clinically, the liver was found to be tender on palpation in the severe cases under report. Modi (1959) recorded soft and fatty liver in fatal cases. These findings suggest involvement of the liver in acute poisoning and the liver function tests in our series also supported this view. The delayed positive van den Bergh test, progressive haemolysis of the blood samples on keeping, increased fragility in some and haemolytic reaction along with port-wine urine of haemoglobinuria in others suggest that jaundice may also partly be due to haemolytic reaction from elevated serum copper level which often imparts reddish tinge to the serum. Intravascular haemolysis may occur in severe copper sulphate poisoning. How far the copper level and the liver are involved in this reaction is difficult to surmise from the present study. Goldberg *et al* (1956) have shown that copper in low concentration causes agglutination and/or haemolysis when incubated with chicken, rabbit or human erythrocytes suspended in saline. They found that copper fragility studies with human erythrocytes suspended with 0·9 per cent saline indicated that (1) normal human erythrocytes begin to haemolyse at 75 μg. per cent of copper concentration, and (2) agglutination begins at 83 μg. per cent (75 to 100 μg.). Copper, however, failed to do so even at a higher concentration when erythrocytes were suspended in normal serum. In a total of 150 determinations of plasma copper in 105 normal individuals, Cartwright *et al* (1948) found the range to be between 116·2 and 121·0 μg. per cent, and the mean ± standard error of the mean was 118·6 ± 1·2 μg. per cent. A few determinations of serum copper level in normal individuals in our series gave a higher figure of 125 to 130 μg. per cent. It appears that copper even at such a high concentration will not lead to haemolysis possibly due to the erythrocytes being suspended in normal serum. But in poisoning when the serum copper level is much elevated and liver functions are deranged, haemolytic reactions may set in. Goldberg *et al* (*loc. cit.*) also produced haemolytic anaemia in the chicken by administering copper. It is suggested that the erythrocytes are destroyed in the liver after exposure to excessive copper concentration in that organ. Alternatively, they suggest that there is an increased concentration of copper in red blood cells leading to increased susceptibility to their destruction, as shown also by other studies on copper metabolism (Gubler *et al*, 1953 ; Bush *et al*, 1955). Albiston *et al* (1940) in drawing attention to the importance of haemolysis in copper poisoining reported enzootic jaundice in Australian sheep characterised by haemolytic anaemia and increased liver copper. They also suggested a mechanism of sudden mobilisation of copper from liver to plasma causing intravascular haemolysis, whereas Goldberg *et al* (*loc. cit.*) have drawn attention to erythrophagocytosis in liver.

We also observed glycosuria in severe acute copper sulphate poisoning which is probably due to liver damage or from lower threshold from renal tubular changes, as in two cases blood sugar recorded during glycosuria was 118 mg. and 82 mg. per 100 ml. respectively. This liver damage causing plasma protein changes, albuminuria and temporary glycosuria without hyperglycaemia in acute copper sulphate poisoning, reminds one of its similarity to hepatolenticular degeneration (Sherlock, 1958) associated with increased tissue copper and to Debre-de Toni-Fanconi syndrome (Sherlock, 1958), in both of which aminoaciduria may be associated with liver damage and glycosuria with normal glucose tolerance curve and renal tubular changes. Lastly, BAL therapy tried in our cases seems to be of definite value in the treatment of severe cases of poisoning and exchange transfusion along with BAL saved the life of one of our severest cases with marked intravascular haemolysis and persistent haemoglobinuria.

Summary

Twenty cases of acute copper sulphate poisoning of varying degrees of severity were studied. The majority of patients were young women who ingested copper sulphate for suicidal purpose. The maximum serum copper level in the observed series was 510 μg. per cent in cases of poisoning and was over 250 μg. per cent in cases associated with haemolytic reaction. The range in five cases of normal controls was between 125 and 130 μg. per cent. In severe cases of poisoning bluish copper derivatives could be seen separating out from blood and urine samples. Three of the severer cases had increased fragility of the erythrocytes ranging from 0 to 0·54 per cent saline and in another case all the samples were haemolysed. Clinically, jaundice was observed in ten cases in five of which varying degrees of progressive haemolysis were encountered in blood samples kept for liver function tests and elevated serum bilirubin was seen in seven cases where it could be estimated and in the remaining three, liver function tests could not be performed due to marked haemolysis. Of these cases three had delayed positive, two indirect and one biphasic van den Bergh reaction. The serum bilirubin values were between 0·2 and 2·6 mg. per cent in ten of the eleven severer cases. The probable reason for the low values of serum bilirubin even in clinically jaundiced patients has been discussed. The cause of jaundice appeared to be hepatocellular or haemolytic and sometimes obstructive damage. Liver function tests revealed in nine moderate and severe cases diminution of total protein to 5·8 - 6·14 g./100 ml, with a tendency to reversal of albumin/globulin ratio. In these cases thymol turbidity was elevated to 6-16 units and serum alkaline phosphatase to 13-25 K.A. units (where it could be performed), suggesting hepatocellular damage. Transient immediate positive van den Bergh reaction was seen in two cases which indicated temporary obstruction to the bile flow. The delayed positive van den Bergh reaction in four cases, progressive haemolysis of the blood samples, increased fragility of the erythrocytes, haemolysis and haemoglobinuria in some of the above cases suggest that jaundice is at least partly due to haemolytic reaction in severe cases of acute copper sulphate poisoning. Transient glycosuria was observed in five of the acute cases and in two of them blood sugar was normal which suggests lowering of renal threshhold due to renal tubular changes. BAL therapy appeared useful in the severer cases and exchange transfusion along with BAL saved the life of one of the severest cases of our series.

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OBSERVATIONS ON TUBEROUS SCLEROSIS IN INDIANS

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Tuberous sclerosis is a rare disease characterised by sclerotic areas in the brain, often associated with lesions of the skin and sometimes of the retina, kidney, heart and/or lung. Occasional involvement of other structures, viz., intestines, pancreas, thyroid, thymus, breast, adrenal and ovary has also been reported. The lesions are rather a hamartoma than a true tumour, i.e., tumour-like malformation showing a faulty mixture of the normal components with a limited capacity for aberrant growth.

Von Recklinghausen (1862) first described the condition as cerebral tuberous sclerosis in a still-born with numerous rhabdomyomata of the heart. Bourneville (1880) considered it as a distinct pathological entity, and entitled it as tuberous sclerosis because of the potato-like appearance of morbid foci. The disease seems to be a congenital dysplasia occurring in early embryonic life. It is transmitted as a well defined heredofamilial pattern though it may also occur sporadically.

The symptom triad of epilepsy, mental retardation and adenoma sebaceum seen in a classical case of tuberous sclerosis is also known as epiloia (Sherlock, 1911), but the term is now becoming obsolete. The features may vary greatly from case to case and a broader term tuberous sclerosis complex has been suggested by some workers.

During the last one year the writer has come across 5 cases of tuberous sclerosis in Indians. The notes on these cases are presented and their clinicial pictures and those of similar cases reported from India by other workers are discussed.

Case Notes

CASE 1 :

A male child, aged 7, presented with grand mal, mental retardation, adenoma sebaceum, phakoma of the retina (Fig. 1, *vide* Plate), calcification of brain and E.E.G. changes, abnormal and paroxysmal—diagnostic of convulsive disorder. There was no family history of the disease. The patient was found to be delinquent in nature. The fits occurring 3-6 times daily for 1½ years were controlled with mesantoin and phenobarbitone. Later, after continuing for a month and a half the anticonvulsant drugs were withdrawn by the parents due to an attack of fever. There was complete remission of fits for nearly two months without any drug whatsoever.

Comment—This patient showed the typical features of the disease. A note on this patient was reported earlier (Chanda, 1960).

CASE 2 :

U.S., female, aged 16, was admitted on 17-6-60 with complaints of cutaneous nodules in the face for 6 years. The past history was non-contributory. Family history showed that her mother died of epilepsy. Her elder brother suddenly died in infancy when only 3 months old. Clinical examination showed dark brown discrete papules from pin point to split pea in size symmetrically over the nose and cheeks (butterfly area), and also a few on the forehead. These were typical of adenoma sebaceum.

Neurological examinations failed to show any abnormality. Fundus oculi was normal. Examination of respiratory and gastro-intestinal systems showed no abnormality. Cardiovascular system showed loud second sound in pulmonary area. There was grade-1 systolic murmur in the pulmonary area.

Investigations—Blood : Hb.—14·21 g. per cent, WBC—6,800/c.mm. with neutrophils 64 per cent, lymphocytes 27 per cent, monocytes 3 per cent and eosinophils 6 per cent.

Fasting blood sugar was 80 mg. per cent, urea nitrogen 10 mg. per cent, non-protein nitrogen 28 mg. per cent, uric acid 2 mg. per cent, cholesterol 161 mg. per cent.

Wassermann reaction of blood was negative.

Stool and urine showed no abnormality. 17-ketosteroid excretion in urine was 3·4 mg./24 hours.

Liver function tests showed serum bilirubin 0·56 mg. per cent, conjugated serum bilirubin 0·15 mg. per cent. Zinc sulphate turbidity test—6 units. Thymol turbidity test—1·5 units. Total protein—8 g. per cent, albumin—4·3 g. per cent, globulin—3·7 g. per cent.

Pancreatic function : Fat absorption was 98 per cent, total fat excretion per day was 1·3 g.

Cerebrospinal fluid was clear and transparent; pressure was normal; cell count 1·4 per c.mm., sugar 75 mg. per cent, chloride 684 mg. per cent, protein 65 mg./100 ml.

ECG showed right ventricular hypertrophy.

Radiographic studies : Skull showed multiple opacities. Chest showed that the pulmonary bay was full. The bones of the hands were normal. Barium meal examination and excretion pyelography were normal.

Biopsy of papules from the face showed a large number of hyperplastic sebaceous glands, plenty of hair follicles and excess of blood vessels.

Comment—This patient showed adenoma sebaceum, with family history of the disease, opacity in the skull, cytoalbuminous dissociation of C.S.F., cardiac affection with right ventricular hypertrophy and low 17-keto-steroid excretion.

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CASE 3 :

B.N., Hindu male, aged 17, was admitted on 28-6-60 for brownish cutaneous nodules of the face, neck and upper part of the chest, which started in the face 7 years back and then gradually spread to the neck and chest.

Past history—The patient suffered from fits from the age of 4 months till the age of 3 years. The fits occurred 3-4 times a day, when the patient used to become stiff, and lose consciousness for a period of 2-3 minutes. There was no involuntary micturition or defaecation.

Family history was non-contributory. His other three brothers and four sisters were healthy.

On examination—Facial eruptions were found characteristic of adenoma sebaceum (Fig. 2). There were small spots of vitiligo on the abdominal wall and at the back of the right forearm. Examination of the respiratory, cardiovascular, gastro-intestinal and nervous systems showed no abnormality. Fundus oculi was normal.

Investigations—Blood : Hb.—12·7 g. per cent, R.B.C. —4·1 mill./c.mm., packed cell volume—39. W.B.C.—7,100/c.mm. with neutrophils 56 per cent, lymphocytes 26 per cent, monocytes 4 per cent and eosinophils 14 per cent.

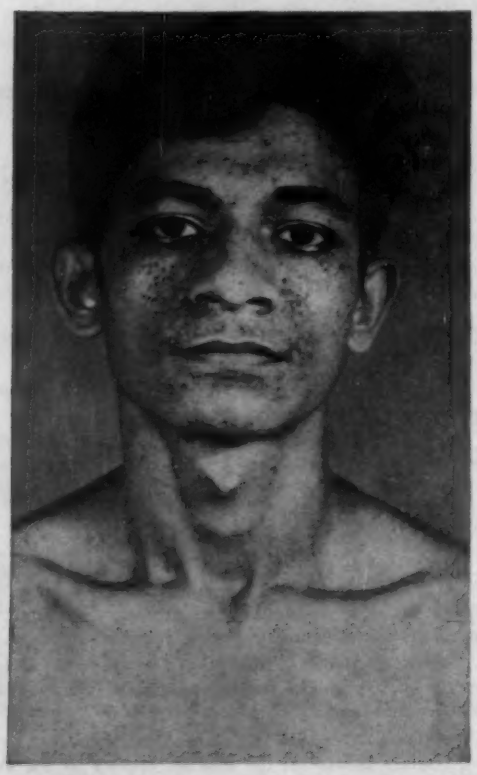

FIG. 2—PHOTOGRAPH SHOWING SYMMETRICAL ERUPTION OF ADENOMA SEBACEUM IN THE FACE. IT WAS PRESENT ALSO IN THE NECK AND CHEST.

Fasting blood sugar—75 mg. per cent, urea nitrogen—12 mg. per cent, non-protein nitrogen—34 mg. per cent, cholesterol—141 mg. per cent.

Wassermann reaction of blood was negative.

The urine was normal. 17-ketosteroid excretion 5·6 mg. in 24 hours.

Stools showed hookworm and trichuris ova.

Liver function tests showed serum bilirubin 0·8 mg. per cent and conjugated serum bilirubin 0·23 mg. per cent. Thymol turbidity test—1·5 units, zinc sulphate turbidity test—4 units. Total protein—7·7 g. per cent, albumin—4·2 g. per cent, globulin—3·5 g. per cent.

Pancreatic functions : Fat absorption 92 per cent, fat excretion 8·4 g. per day

Cerebrospinal fluid was clear and transparent; the pressure was normal, cell count 0·7 per c.mm., sugar 87 mg. per cent, chloride 740 mg. per cent, protein 75 mg. per cent.

Electrocardiogram was normal.

Electroencephalogram showed a rhythm of 9 to 10 cycles per second with some minimal paroxysmal changes indicative of mild paroxysmal type of disorder.

Radiographic studies—The skull was normal; pineal body was calcified. The bones of hands were normal. The chest was normal. Excretion pyelography showed dilatation of both ureters (Fig. 3, *vide* Plate). Barium meal examination showed normal appearance.

Biopsy of papule from the face showed a large number of hair follicles, hyperplasia of sebaceous glands; and no excess of sweat glands or blood vessels (Fig. 4, *vide* Plate).

Comment—This patient showed : adenoma sebaceum, epilepsy which now has undergone remission and E.E.G. changes of some abnormality, cyto-albuminous dissociation of C.S.F. and low 17-ketosteroid excretion. There were associated congenital anomalies of ureters and small cutaneous depigmented areas in the skin known as vitiligo.

CASE 4 :

D.C., Hindu male, aged 17, was admitted on 18-7-60 with complaints of reddish brown cutaneous nodules on the face for the last 8 years. His mother said that he was backward at school, could not remember his lessons and suffered from fears since childhood. Past history showed that at the age of 7, he suffered from fever with one attack of fit, and after the fever, lasting from 2-3 days, he developed paralysis of the right leg which gradually improved in about 3 years. Family history was non-contributory. His 3 brothers and 4 sisters were all healthy.

On examination—Eruptions characteristic of adenoma sebaceum were seen mainly on the face, also a few in the neck and upper part of the chest. At places the surface of the cutaneous lesions was warty.

Examination of the respiratory and gastro-intestinal system showed no abnormality. Heart sounds were normal. Grade II systolic murmurs were present in the pulmonary and mitral areas.

Fig. 1—Photograph of right fundus showing phakoma near the optic disc (Case 1).
A=optic disc ; B=retinal vessels ; C=phakoma.

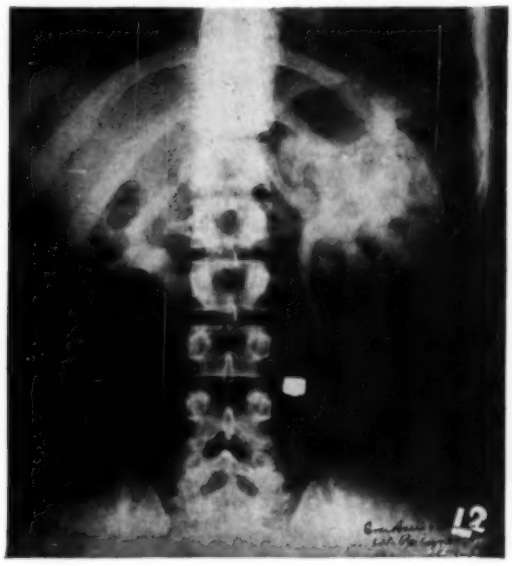

Fig. 3—Excretion pyelography showing dilatation of both ureters (Case 3).

Fig. 4—Photomicrograph of adenoma sebaceum showing hyperplastic sebaceous glands of Balzer type (Case 3). H. & E. × 100

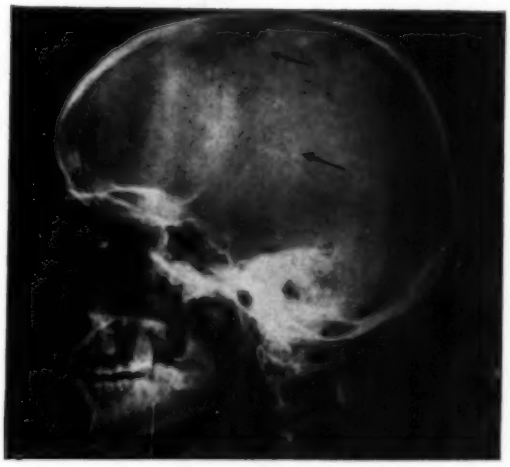

Fig. 5—Roentgenogram of skull showing multiple areas of intracranial calcification (Case 4).

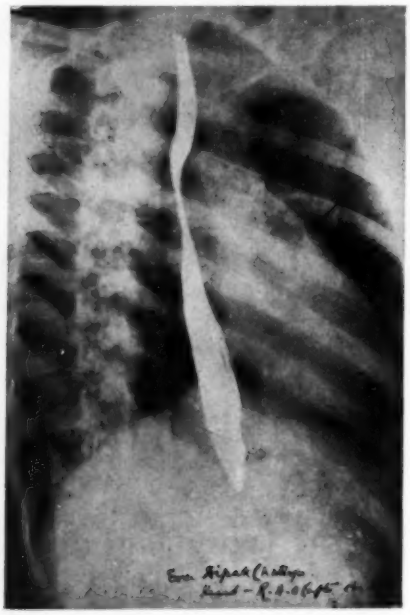

Fig. 6—Roentgenogram of chest (R. O. A. view) showing that the pulmonary bay is full (Case 4).

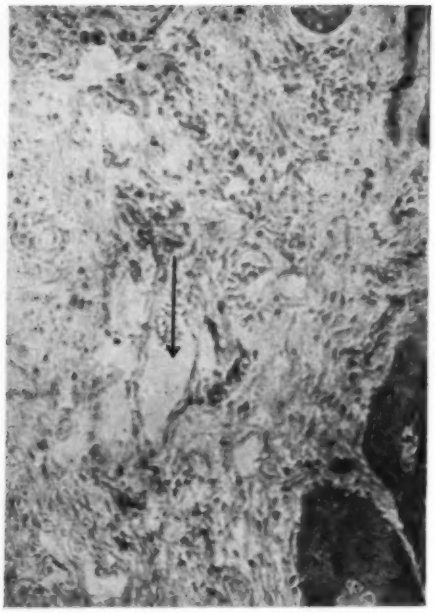

Fig. 7—Photomicrograph showing telangiectatic blood vessels in adenoma sebaceum of Pringle type (Case 4). H. & E. × 100

CHANDA—*Observations on Tuberous Sclerosis in Indians (p. 337)*

Fig. 1—Skiagram showing scoliosis of the spine, and renal calculi (Case 1).

Fig. 2—Skiagram showing multiple renal stones causing in the back a sinus (outlined by the ureteric catheter) (Case 2).

DIAS—*Atypical Clinical Manifestations in Renal and Ureteric Calculosis (p. 354)*

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Neurological examination showed that the patient was mentally retarded. There was no other abnormality.

Fundus oculi was normal.

Investigations—Blood : Hb.—12·7 g. per cent, R.B.C. —3·6 mill./c.mm., P.C.V.—40, W.B.C.—3,400/c.mm. with neutrophils 62 per cent, lymphocytes 32 per cent, monocytes 5 per cent and eosinophil 1 per cent.

Fasting blood sugar was 100 mg. per cent, blood urea nitrogen 16 mg. per cent, non-protein nitrogen 37 mg. per cent, uric acid 2·5 mg. per cent, cholesterol 145 mg. per cent.

Wassermann reaction of blood was negative.

Stool and urine showed no abnormality. 17-keto steroid excretion in urine was 4·8 mg./24 hours.

Liver function tests : Serum bilirubin—0·8 mg. per cent, conjugated serum bilirubin—0·4 mg. per cent, zinc sulphate turbidity test—2·6 units, thymol turbidity test —1 unit. Total serum protein—7·6 g. per cent, albumin— 4·3 g. per cent, globulin—3·3 g. per cent.

Pancreatic function—Fat absorption was 99·3 per cent, total fat excretion—0·71 g. per day.

Cerebrospinal fluid was clear and transparent; the pressure was normal. Cell count—1·4 cell per c.mm.; sugar—97 mg. per cent, chloride—750 mg. per cent, protein—35 mg. per cent.

Electrocardiogram showed right ventricular hypertrophy.

Radiographic studies : X-ray of skull showed multiple areas of calcification (Fig. 5, *vide* Plate). Chest showed that the pulmonary bay was full (Fig. 6, *vide* Plate); bones of hands—normal. Excretion pyelography was normal. Barium meal was normal.

Biopsy of the papule from the face showed a large number of hair follicles, hyperplasia of sebaceous glands, plenty of telengiectatic blood vessels (Fig. 7, *vide* Plate) and normal sweat glands.

Comment—The patient showed adenoma sebaceum, mental retardation, history of single attack of fit at the age of seven years, calcification in the brain, cardiac affection with right ventricular hypertrophy and low 17-ketosteroid excretion in urine.

CASE 5 :

K.M., Hindu female, aged 18, attended the out-patient department with complaints of brownish cutaneous nodules on the face since birth. The patient's brother said that the patient was forgetful, lacked concentration and her memory was dull. She had to discontinue her studies as she did not make good progress at school. Family history revealed that her grandmother had fits throughout her life. Her two brothers and one sister are healthy.

On examination, facial eruption characteristic of adenoma sebaceum was seen. Examination of the cardiovascular, respiratory and gastro-intestinal systems showed no abnormality.

Neurological examination revealed no abnormality except that the patient was slightly subnormal mentally. Fundus oculi showed that the right inferior temporal vein was dilated and sheathed by a white line. It was possibly a congenital defect.

Investigations—Blood : Hb.—14·5 g. per cent, R.B.C. —4·2 mill./c.mm., P.C.V.—41, W.B.C.—11,800/c.mm. with neutrophils 69 per cent, lymphocytes 21 per cent, monocytes 4 per cent and eosinophils 6 per cent. Blood urea nitrogen—8 mg. per cent and non-protein nitrogen —27 mg. per cent.

Urine and stool examinations showed no abnormality.

Liver function tests : Total serum bilirubin—0·42 mg. per cent, conjugated serum bilirubin—0·2 mg. per cent, zinc-sulphate turbidity test—5 units, thymol turbidity test—2·2 units. Total protein—7·7 g. per cent, albumin —4·5 g. per cent and globulin—3·2 g. per cent.

Skiagram of the skull and the chest showed no abnormality.

Comment—This patient showed adenoma sebaceum, mental retardation and a positive family history. There was associated congenital vascular anomaly in the retina.

DISCUSSION

The term tuberous sclerosis strictly refers to the cerebral forms of the disease but in practice, it is conveniently employed to include the different clinical forms of the same disease. In some reported cases neurological features were absent clinically and were found at necropsy. In still others, the brain showed nothing abnormal despite well marked expression of the disease in other organs, like the heart, kidney, and skin. The presence of the disease may be suspected by a urological surgeon or even by a dermatologist.

Clinical diagnosis of tuberous sclerosis can be made if two or more of the following features can be demonstrated, viz., mental retardation, epilepsy, adenoma sebaceum, phakoma of the retina, multiple mixed tumour of the kidney, a family history of the disease (Molten, 1942).

The present series of 5 cases conforms to the diagnosis of tuberous sclerosis. Analysing the clinical features, adenoma sebaceum was present in all cases. In Cases 2 and 4 adenoma sebaceum was of Pringle's type and in Cases 1 and 3 they were of Balzer's type, as seen histologically.

Three cases (Cases 1, 3 and 4) had fits. In Case 4, there was a single attack of fit at the age of seven years. In Case 3, there was a complete remission of fits since the age of 4 years. In Case 1, fits showed remission after a short period of anti-convulsant therapy. Actually long remission of fits can occur (Critchley and Earl, 1932). Mental retardation was observed only in three cases (Cases, 1, 4, 5). Phakoma of retina (Chanda, 1960) was present in Case 1. This is quite in conformity with observations of Koch and Walsh (1930) who found the ratio of the number of cases with retinal tumour to the total number of cases to be 1 : 5. Case 5 showed an associated vascular

anomaly in the retina. Various vascular anomalies of the retina have been reported in the literature. Thus van der Hoeve (1920, 1923) had recorded retinal tumours in association with multiple aneurysms of a small retinal artery. Solmon (1932), quoted by Hall (1940), described naevoid spots or naevus. The occurrence of these vascular anomalies in the retina made van der Hoeve (*loc. cit.*) conclude that the disorders of Bourneville and von Hippel-Lindau have much in common and belong to the same group of anomalies. According to van der Hoeve (*loc. cit.*) the retinal lesions of tuberous sclerosis and neurofibromatosis are similar, and he considered that neurofibromatosis had features common to both tuberous sclerosis and disorder of von Hippel-Lindau in that they contain neurocytes, nerve fibres and capillary angioma. Again Lindau's disease like tuberous sclerosis and neurofibromatosis occurs as a mendelian dominant, and is thus both hereditary and familial. Hall (1940) observed that tuberous sclerosis and von Recklinghausen's disease have occurred in the same patient.

Two patients (Cases 2 and 3) showed high protein content of cerebrospinal fluid, being 75 and 65 mg. per 100 ml. respectively. The reason for this is not very clear. It is possible that intraventricular tuberous sclerosis may cause cytoalbuminous dissociation. This is a new observation made by the writer.

A family history of the disease was found in two out of five cases (Cases 2 and 5) as it is a heredofamilial disease. Three cases had no family history ; possibly the disease occurred by mutation of gene (Penrose, 1938). Usually cases occurring without family history are of a severe type but in only one case (Case 1) out of three without family history, the disease was severe.

Two cases (Cases 2 and 4) had cardiac affection ; there was a systolic murmur in the pulmonary area with prominent pulmonary bay radiologically and electrocardiographic abnormalities of right ventricular hypertrophy. Right ventricular hypertrophy may occur secondary to pulmonary tuberous sclerosis (Dawson, 1954) but clinical features and x-ray changes in the lung do not suggest it. Friedberg (1956) is of opinion that tuberous sclerosis may cause diffuse cardiac involvement and enlargement without distinctive tumour formation. The distinctive tumour in the heart is often a rhabdomyoma. It has been observed that tuberous sclerosis occurred in 50 per cent of congenital rhabdomyomata of the heart (Batchelor and Maun, 1945).

Three cases showed radiological changes in the skull. Two (Cases 1 and 4) showed definite areas of intracranial calcification due to calcification of areas of the tumour. One (Case 2) had opacities in the skull not amounting to calcification. Of these, Case 1 was associated with epilepsy and Case 4 had only a history of one attack of epilepsy at the age of seven. The case with opacity in the skull had no epilepsy or mental retardation. Case 3, who had epilepsy in childhood, had no pathological intracranial calcification. The importance of radiology in tuberous sclerosis has been summarised by Whitaker (1959) and also by Hawkins (1959). Radiological changes in the skull is found in more than two-thirds of cases.

In three cases (Cases 2, 3 and 4) 17-ketosteroid excretion was low although there was no clinical evidence of adrenocortical deficiency in any or hypogonadism in the male patients.

It was observed in two patients (Cases 2 and 4) that after biopsy, the cutaneous lesions of adenoma sebaceum regressed a bit. It may be that mild trauma with inflammatory reaction caused this regression as it is known that the cutaneous lesions of granuloma annulare regress after biopsy.

Indian literature shows a paucity of reports of cases of tuberous sclerosis, only four cases having been reported in the available literature. Singh (1954) reported a case of tuberous sclerosis in a girl aged 10 years who had mental deficiency, adenoma sebaceum, epileptic fits and intracranial calcification. Ray (1955) reported one case in a boy of 3 years with petit mal attacks, adenoma sebaceum, mental retardation, shagreen skin.

Ganguli *et al* (1955) reported a case in a boy of 14 years with mental retardation, epileptic fits, intracranial calcification, facial adenoma sebaceum and retinal tumours. There was associated congenital anomaly of blue dot cataract in both eyes. There was a family history of the disease in the patient. Srivastava *et al* (1959) also reported one case in a male aged 30 who suffered from fits from the age of three till the age of ten, with remission for the rest of twenty years, history of repeated bout of haemoptysis requiring hospitalisation once, adenoma sebaceum in the face (Balzar type), periungual fibromata of right ring finger with longitudinal furrows in all the nails of the hands and feet, phakoma in the right eye and sheathing of the part of the retinal artery in upper temporal quadrant, radiological changes in marked pulmonary reticulation, and presence of cysts in carpals and phalanges of the right hand. There was a family history of the disease with transmission to some of his children.

Roy Chowdhury and Sen (1959) reported a case of tuberous sclerosis in a Bengali girl aged 16 who had a large renal tumour on the left side develop-

ing gradually for 4 years, the other kidney being normal. The patient had suffered from fits for two years from the age of six to eight, followed by remission. She had adenoma sebaceum on the face with an atypical histological picture, intelligence slightly below normal, a few ungual fibromas, E.C.G. changes of incomplete right bundle branch block with T-inversion over right ventricular surface leads, radiological changes of thickening of skull bones with two faint areas of intracerebral calcification and doubtful mottling of perihilar regions of the lung. Excretion pyelography showed failure of excretion of dye from the left kidney, and normal excretion on the right side. The tumour of the left kidney was removed and found to be a perithelioma histologically. The patient was followed up and after two years was found to have renal tumour on the right side and excretion pyelography of this remaining kidney which was normal before now showed hydronephrotic changes and there was also slight elevation of non-protein nitrogen content of blood.

This disease is a rare condition in general practice. Dawson (1954) is of opinion that its incidence is 1 in 150,000 in the general population in the United Kingdom and the incidence of tuberous sclerosis with mental defect is of the order of one in 300,000 of general population. Brain *et al* (1951) is of the opinion that the disease is not found amongst coloured races. We have no record of the incidence of the disease in India so far. But the disease certainly occurs in Indians.

Summary

Tuberous sclerosis is a rare heredofamilial disease. An account of 5 cases in Indians is recorded. The essential features of the cases were: epilepsy, mental retardation, phakoma in retina, intracranial calcification, cytoalbuminous dissociation in cerebrospinal fluid, adenoma sebaceum either of Balzer or Pringle type, low 17-ketosteroid excretion, cardiac involvement with right ventricular hypertrophy and familial tendency of the disease.

There was associated congenital anomaly of dilatation of retinal vein with sheathing, renal involvement with dilatation of ureters and cutaneous changes of vitiligo.

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PRACTITIONERS' SERIES

PROGRESS IN CARDIOVASCULAR SURGERY*

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"The heart is the chief mansion of the soul, the organ of the vital faculty, the beginning of Life, the fountain of the vital spirits and so, consequently the nourisher of the vital Heat, the first to live and the last to die."—*Ambroise Paré*

* A lecture delivered during the Diamond Jubilee Celebrations of the Christian Medical College Hospital, Vellore, August 1960.

Ambroïse Paré was not a mystic. He was not even a poet. He was a famous French surgeon of the 16th century (1510-1590). In fact Ambroïse Paré is known as the father of French Surgery. To those outside France, he is better known for the correlation he established between syphilis and vascular aneurysms.

In course of time the heart came to be recognised and studied as a muscular pump responsible for receiving impure blood from the body and its redistribution after oxygenation in the lungs. The heart had lost its halo, but not its importance. It was no longer the chief mansion of the soul, only a mundane thing, but a vital member of the corporeal anatomy.

The surgeon, naturally laid seige to it. But unlike other organs of the body it defied the attack and eluded conquest. The heart still remains the last bastion in the body which the surgeon has not yet fully conquered. All the same a good deal has been gained. Its walls, and its interior have been invaded again and again not for devastation or carnage, but for repair and renovation. This process of subjugation goes on continuously and defiance and resistance are crumbling.

It has been said that when the caveman stanched the bleeding from the wound of a companion hurt in hunt or fight, cardiovascular surgery was born. That must have been in the dim prehistoric past when earth and earthly life were still adjusting and re-adjusting to each other for the final acceptance of the fast evolving *homo sapiens*.

However, the earliest record of successful cardiac surgery is that of Rehn's suture of a heart wound in the close of the 19th century (1896). The next landmark in the history of cardiac surgical progress was the successful ligation of a patent ductus arterious by Gross in 1938. In 1944 Crefoord of Sweden operated on coarctation of the aorta and a year later the epoch-making operation, envisaged by Helen Taussig and brilliantly executed by Alfred Blalock at Johns Hopkins, was offered for the hitherto hopeless condition of the 'tetralogy of Fallot'. After this, nothing was going to stop the cardiovascular surgeon. During the ensuing years, there has been a breath-taking quickening in the pace of this progress, and many more congenital and acquired lesions of the heart and blood vessels so far considered to be outside the scope of corrective or palliative surgery have been brought under the knife.

What are the factor or factors responsible for this sudden, spectacular and successful break through into a difficult field of surgery? Apart from the inherent human longing for adventure, the irrepressible desire to achieve the unattainable and the confidence gained from previous accomplishments, the following reasons may be mentioned:

1. A new appreciation and thorough application of the simpler diagnostic procedures and the introduction of new methods.
2. Advances in anaesthesia.
3. The discovery and development of the antibiotics.
4. A better appreciation of cardiopulmonary physiology.
5. The clinical application of hypothermia.
6. The development of extracorporeal circulation.

Diagnosis

One does not have to be a highly specialised cardiologist to diagnose most cardiac lesions with reasonable accuracy. Nor is it necessary to have facilities for cardiac catheterisation, angiocardiography or aortography to confirm every clinical diagnosis. In fact, the majority of cases are referred for possible surgery by general practitioners or others who are not all cardiologists. A careful clinical examination and the use of simple facilities of the average modern practitioner can establish a correct diagnosis in most of the cardiovascular lesions. Patent ductus arteriosus, Fallot's tetralogy, coarctation of the aorta, septal defects and vascular rings may be diagnosed or may be strongly suspected from a proper evaluation of history and clinical findings. E.C.G., x-rays and fluoroscopy can confirm most of these diagnoses or suspicions.

At a cardiovascular surgical centre, a cardiologist is an essential member of the team and facilities for special methods of diagnosis, like cardiac catheterisation studies, angiocardiography, etc., are available. But these special methods are used only where a correct diagnosis cannot be made otherwise as in atypical cases, or where multiple lesions are suspected, or to evaluate the direction and amount of shunts and to assess intracardiac and arterial pressures when indicated.

Operative Techniques

In general, the operation for cardiovascular lesions can be divided into two types:

1. Extracardiac:
   - (a) Direct.
   - (b) Indirect.
2. Intracardiac:
   - (a) Blind.
   - (b) Direct vision:
     - (i) Hypothermia
     - (ii) Pump oxygenator
     - (iii) A combination of these.

In the extracardiac procedure, surgery is mostly confied exclusively to the great vessels and only rarely need even the pericardial sac to be opened. These procedures may again be classed under (a) direct and (b) indirect.

'Direct' method—as in the case of interruption of a patent ductus arteriosus, when the operation straightaway corects the lesion.

'Indirect' method—as in palliative procedures for an intracardiac lesion, such as the Blalock-Taussig shunt operation for Fallot's tetralogy. The operation does not set right any of the four cardiac defects; in fact, it creates a fifth defect to provide a shunt between the systemic and pulmonary circulations to effect better oxygenation of the desaturated systemic blood.

The intracardiac procedure may be (a) blind or (b) under direct vision.

A typical example of the former is the transventricular application of a valvulotome to correct congenital pulmonary stenosis. Intracardiac operations under direct vision would necessarily entail either an inflow and outflow occlusion under hypothermia or the use of a pump-oxygenator to bypass the heart. The former allows only about 6-12 minutes for closure of atrial septal defects of the secundum type, and repair of aortic and pulmonary valvular stenosis may be accomplished within this brief period. When more time is necessary as in the case of correction of an atrial septal defect of the primum type, or for closure of a ventricular septal defect, a heart-lung machine would be mandatory as this would take over temporarily the work of oxygenation of blood, and its distribution to the body. The perfect heart-lung machine has not yet been devised but there are different types in fairly successful use.

The Scope of Cardiac Surgery

Congenital lesions—A decade ago only a few congenital cardiac lesions, such as patent ductus arteriosus, coarctation of the aorta, and tetralogy of Fallot, were amenable to surgical treatment. For the latter, only two palliative shunt procedures, those of Blalock and of Potts, were available. Today the list of lesions that may be corrected or offered some degree of palliation is much longer and fresh additions are being made to it.

Hypothermia is being used extensively in the open repair of atrial septal defect of the secundum type and of pulmonary stenosis with normal aortic root. After the occlusion of the great vessels at about 30°C. a safe period of 6-12 minutes is available to the surgeon for intracardiac repair. Usually 3-4 minutes are all that is necessary.

The heart-lung machine has revolutionised cardiac surgery, greatly widening its scope. The cardiopulmonary bypass provides adequate time to do unhurried and meticulous reparative work within the heart. Ventricular septal defect, anomalous pulmonary venous drainage and similar and still more complicated conditions can now be surgically corrected. At some centres total correction of Fallot's tetralogy is being done with some success.

The following is the tentative list of congenital lesions that are at present submitted to surgical treatment:

(A) Conditions for which well established procedures are available with or without the use of hypothermia or cardiopulmonary bypass:

1. (a) Patent ductus arteriosus.
   (b) Coarctation of the aorta.
   (c) Vascular rings.
   (d) Pulmonary stenosis.
   (e) Atrial septal defect (secundum type).
   (f) Aortic-pulmonary septal defect.
   (g) Ventricular septal defect.
   (h) Congenital aortic stenosis.
2. Tetralogy of Fallot.

(B) Conditions for which surgery is being done with a fair amount of success:

   (a) Tricuspid atresia.
   (b) Anomalous pulmonary venous drainage.
   (c) Transposition of the great vessels.
   (d) Endocardial cushion defects.

Acquired lesions—Practically all the acquired diseases of the heart have been brought within the scope of surgical treatment. While some methods are more or less standardised others are still in the pioneering stage.

Surgical correction of rheumatic mitral stenosis is the most widely practised cardiac operation which gives extremely gratifying results. The transauricular method as initiated by Bailey and Harken is the standard procedure most frequently used. In recent times a transventricular approach has been introduced. This is fast gaining popularity because of the excellent commissurotomy obtained by this method.

Aortic stenosis may be corrected by transventricular or transaortic closed method or under

direct vision using hypothermia. The results of surgery, whatever method is used, are fairly good if excessive calcification of the valve has not occurred. Once that has happened and it occurs quite early in the disease, the results are not always satisfactory.

Open methods using hypothermia or cardiopulmonary bypass have not solved the practical problems in the correction of valvular insufficiency where tissue deficit and/or dilatation of valvular rings offer major difficulties. The currently available artificial valves have not given the final answer.

The following acquired conditions are amenable to surgery at the present time:

(A) Those in which good or fair results have been obtained with established procedures with or without the use of hypothermia or cardiopulmonary bypass:

1. Mitral stenosis.
2. Tricuspid stenosis.
3. Aortic stenosis.
4. Coronary insufficiency.
5. Pericarditis.
6. Aneurysm and occlusive diseases of the aorta and its major branches.
7. Intracardiac tumours.

(B) Condition is which palliation has been obtained:

Aortic insufficiency (Huffnagel operation).

(C) Those in which operative procedures are still in the pioneering stages:

1. Aortic insufficiency (total correction).
2. Mitral insufficiency.

Conclusion

The cardiovascular surgeon may have every reason to be proud of his achievements. But he should also have the humility to recognise that there are still problems to be solved, and difficulties to be surmounted and probably after each achievement there would be fresh ones awaiting solution.

In the words of one of the great pioneers in the field:

"In medicine there are no ultimate solutions to problems—only ways of doing things better and thus for the future the horizons remain unlimited".

SPECIAL ARTICLE

A TRIAL OF TRIAMCINOLONE IN INTRACTABLE RESPIRATORY ALLERGIES

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The usefulness of the steroids like cortisone, hydrocortisone, prednisone and prednisolone in the treatment of intractable respiratory allergies has been definitely established. The therapy with these steroids, however, sometimes causes many undesirable side-effects like disturbances in mineral balance, spread of inflammatory lesion, hyperglycaemia, hirsutism and moon facies. Efforts have, therefore, been constantly made to obtain a substance with greater glucocorticoid action, more anti-inflammatory action and less mineral corticoid activity.

Bernstein *et al* (1956) recently synthesised a new derivative of cortisone and named it triamcinolone. This is a hydrofluoric derivative of hydrocortisone. Its chemical formula is

9α-fluoro 16α-hydroxy-Δ^1-hydrocortisone.

This cortisone derivative has already been used clinically in human beings and has been reported to be effective in severe dermatoses (Rein *et al*, 1957), psoriasis (Shelley *et al*, 1958), disseminated lupus erythematosus, nephrotic syndrome (Jorge *et al*, 1959), asthma (Sherwood and Cooke, 1957), and many others. The present paper incorporates the results achieved by the use of this drug in the treatment of intractable respiratory allergies.

Material and Method

Patients attending the Allergy Clinic of the S.M.S. Hospital, Jaipur, were chosen for the present investigation.

The drug was given to those patients of respiratory allergy where the manifestation could not be controlled by the usual conventional methods of treatment. The trial was made in 20 patients of which 8 were males and 12 were females. Of these patients, 16 had bronchial asthma, 3 had hay fever and one had allergic rhinitis. To start with, the drug was given in doses of 24 to 32 mg./day depending on the severity of the attack and the body build of the patient. This dose was gradually curtailed by 4 mg. on every third day till the maintenance dose was reached. This was conti-

nued in most cases for a period that corresponded to the season of the disease in cases of seasonal patients and in others for a period of 3 months. In one case of rhinitis it was given for over 9 months and in one case of asthma it was stopped after just a week.

All the patients were examined at least twice a week and more often, if necessary. A careful record of their progress was maintained. An assessment was made not only of the allergic state of the patient but also of any other side reaction. On every visit the patient was weighed and his blood pressure was recorded. Morphological changes like the moon facies, obesity or hirsutism were specially looked for. The estimation of the serum sodium and potassium was done in all cases, at least once in two weeks.

In those patients who had had other steroids on previous occasions, an attempt was made to evaluate as to which drug suited them better, i.e., the one they had taken before or triamcinolone.

Observations

The ages of the 20 patients in whom the drug was tried were distributed equally between the 2nd and 6th decade of life, i.e., there were four patients for each decade.

Excepting one patient who had the disease for less than one year all others had respiratory allergies for many more years. Five cases had the disease for 2 years, three cases for 3 years, two cases for four years, three cases for five years and seven cases between five and ten years. At the start of treatment the duration of the continuous allergic attack in ten cases was two weeks and in eight patients for more than 3 weeks. One patient had the chronic asthmatic, attack for 6 months and one patient for less than a week. Excepting three patients who received 32 mg. of triamcinolone daily in the beginning, all others received 24 mg. of the drug per day. In eight cases, the severity of the attack improved within 24 hours of the therapy, in five within 36 hours and in seven within 48 hours. Complete relief was obtained in one patient within the first 24 hours, in six patients within 48 hours, in five patients in 3 days and in eight others in four days. The daily maintenance dose was found to be 2 mg. in 8 patients and 4 mg. in 12 patients.

Of the side-effects, weakness was most commonly complained of, and occurred in 3 patients. It was a feeling of tiredness but not of a very severe degree. Two patients complained of heaviness in the eyes. These symptoms improved immediately after the drug was stopped. No appreciable change was recorded in the blood pressure and there was never a tendency for it to show an upward trend. The sodium and potassium levels of the blood consistently maintained their pretreatment status. Similarly, no appreciable change was recorded in the body weight of the patients except in two where in the first four days of the start of treatment there was a diminution in the body weight by 2 pounds. The sense of euphoria which accompanies steroid therapy was also manifest with this drug.

Discussion

In the present investigation triamcinolone was found to effectively relieve the allergic manifestations. It was striking how within 24 hours the patients who were very miserable a day before were rendered comfortable. We did not encounter any serious side-effects to this drug and as a short anti-allergic treatment it was found to be an effective remedy in intractable patients. The minor degree of weakness felt by the patients did not seem to interfere with their normal routine of life and the feeling of heaviness in the eyes disappeared soon after the drug was stopped. Side effects to this drug have been reported by other workers. Criep (1959) in his trial of 250 patients found that depending on the size of the daily dose the patients complained of any of the following symptoms: insomnia, tremor, headache, euphoria, depression, vertigo, increased irritability and weakness. On more prolonged use, he also observed peptic ulcer, buffalo humps, moon facies and hirsutism. Feinberg *et al* (1958) found triamcinolone a potent anti-allergic hormone producing therapeutic effects with about half the dose required for prednisolone. They described a peculiar syndrome consisting of headache, dizziness, sleepiness and weakness.

None of the patients in the present series showed any change in their blood electrolyte level. This value of triamcinolone in not retaining sodium makes it a safer drug for the elder asthmatic who may have hypertension, as a matter of fact, the mildly hypotensive effect observed with this drug may be of added value in this direction*.

Summary

Triamcinolone was tried in those 20 patients of respiratory allergy who were unresponsive to the usual conventional methods of treatment. The drug proved useful in ameliorating the condition in all patients and only minimal side reactions were encountered.

* We have known cases where use of triamcinolone has been followed by rise of blood pressure.—Ed., *J. Indian M. A.*

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PUBLIC HEALTH

GENERAL HEALTH SURVEY IN A GROUP OF VILLAGES IN RURAL HEALTH CENTRE, SAROJINI NAGAR, LUCKNOW

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INTRODUCTION

A whole-time department of social and preventive medicine was established at the King George's Medical College, Lucknow, in March 1958, and in March 1959 its rural health centre commenced functioning at Sarojini Nagar, the headquarters of a community development block. One of the objects of this centre is to provide a field training area for medical undergraduates and interns of the department. As the rural health centre is developing a comprehensive health care programme in a demonstration area around Sarojini Nagar, it was felt that before such a programme was initiated, a general health survey of the area was necessary to provide baseline data on which not only the development of various programmes would depend but also the future assessment of work in the area, and the data would also be of value for teaching and research purposes.

Health surveys in a number of community project blocks in various parts of India have been carried out in recent years by the Ministry of Health, Government of India, through the All-India Institute of Hygiene and Public Health, Calcutta. Reports of Saktigarh block, West Bengal, 1955 (Seal *et al*, 1959) and of Dabra block, Madhya Pradesh, 1955-56 (Seal *et al*, 1959) have been published so far. The Captainganj block in the district of Gorakhpur, Uttar Pradesh, has also been surveyed but the report is not yet available. As mentioned above general health surveys have been carried out in Singur (Lal and Seal, 1949) and in Sikkim (Seal and Bhattacharji, 1957).

AREA, PERIOD OF SURVEY AND PROCEDURE

The general health survey in the rural health centre was carried out in a group of four villages, viz., Amausi, Besa, Gouri and Rahimabad, around Sarojini Nagar during May to August 1959 and the period covered was one year from May 1958 to April 1959. The procedure consisted of:

(i) Recording of histories of individuals and families regarding the socio-economic conditions, state of health and disease and factors likely to influence them;

(ii) Physical examination, rapid clinical examination and nutritional assessment supported by laboratory confirmation where considered necessary; and

(iii) Diet survey of a selected number of households.

The recording of information was done by one of us (S.C.B.) by personal visit to each household. Three separate specially designed schedules (individual, family and village), in the preparation of which guidance was obtained from those used by Lal and Seal (1949) and Seal and Bhattacharji (1957), were used. The technique of sample survey was applied. Twenty per cent of the households of each village was fixed as the sample size. The main sample and sub-samples were obtained with the help of Tippet's random numbers. Of the 1,075 families in the four villages with a total population of 5,313, the sample consisted of 212 families, but actually 164 families were covered by the survey and 862 persons out of 1,002 in the sample were interviewed and examined.

PHYSIOGRAPHY

The land area in the rural health centre, Sarojini Nagar, is a fairly flat plain, well supplied by a network of irrigation canals. The average annual raifall is 35·56 inches. There is consi-

derable variation of temperature, the average maximum temperature for past three years was 105°F and the minimum 49°F. The climate is hot and humid from April to September and cool during October to March.

Socio-Economic Conditions

The age distribution of the population in the sample (Table 1) corresponded generally to that of Uttar Pradesh, except in the age group 30-39 years which contained only 9·6 per cent of the population, as compared to 13·4 per cent in Uttar Pradesh (1951 Census). This low percentage in the above age group most probably reflects the tendency of able-bodied persons to accept work in cities and reside there.

Table 1—Showing Percentage Distribution of Population by Age Groups Compared with Uttar Pradesh (1951) and United States (1950)

Area	Age group in years					
	Below 10	10-19	20-29	30-39	40-49	50 and above
R. H. C., Sarojini Nagar ...	25·4	21·9	15·1	9·6	11·7	16·1
Uttar Pradesh ...	26·2	21·0	16·2	13·4	10·4	12·8
United States ...	20·1	14·5	15·8	14·8	12·7	22·1

The density of population was 1,083 persons per sq. mile as compared to 487 for the entire rural area of Uttar Pradesh (1951 Census). 26·0 per cent of the population was literate as compared to 28·0 per cent at Saktigarh (1955). 34·9 per cent of the school-going population (5-14 years) were attending school. The main occupation groups are shown in Table 2.

Table 2—Showing Main Occupations of the Sample Population (Age 20 Years and Above)

Occupation	Number	Percentage
House worker*	209	44·0
Cultivator	105	22·1
Cultivator and labourer ...	44	9·3
Service	33	7·0
Labourer	27	5·7
Artisan	8	1·7
Landlord	7	1·5
Shopkeeper	7	1·5
Clerk or sedentary occupation	2	0·4
Miscellaneous	18	4·0
Unemployed	13	2·8
Total ...	473	100·0

* Adult females.

71·3 per cent of the population depended on agriculture, but in comparison to Uttar Pradesh (1951 Census) a higher percentage was dependent on other services and miscellaneous sources. This was because of the proximity of the area under survey to Lucknow city, Amausi aerodrome, the Sarojini Nagar Development Block and Munshi Land Institute at Sarojini Nagar, all of which provide opportunities for employment to residents of these and the neighbouring villages. Majority of the families were single, 20·0 per cent of the population was addicted to tobacco and 4·0 per cent had some disability (Table 3).

Table 3—Showing Percentage Distribution of Population according to Addiction, Nature of Families and Disability

	Sarojini Nagar (1959)	Saktigarh (1955)	Debra (1955-56)
1. Tobacco-chewing and smoking ...	20·0	49·7 (males)	28·3 (smoking only)
2. Joint families ...	31·7	32·3	48·5
3. Single families	68·3	62·5	51·4
4. Disability ...	4·0	2·2	4·1

98·0 per cent of the houses had no latrines. 88·8 per cent of the families drew water from open shallow wells which showed evidence of recent and past pollution by animal and vegetable origin. The average number of rooms per house was 2·7 and 86·4 per cent of them did not have cross ventilation. There was no separate kitchen in 87·7 per cent of the houses. The average family size was 5·3 and the average land holding was 5·3 acres per family. The average annual *per capita* income was Rs. 190·00 and the average annual *per capita* expenditure was Rs. 176·00. Fifty-two per cent of the families were in debt. The average expenditure per head per year on health was Rs. 6·86 or 3·9 per cent of the total expenditure. The expenditure on food was 78·6 per cent of the total. The diet was deficient in proteins (mainly of animal origin), fats, calcium and vitamins A and C. The intake of carbohydrates was in excess of the requirements.

Marriage rate in the population was 22·0 per thousand, the average age at marriage was 11·8 years for females and 13·2 years for males and the age at first pregnancy was 15·1 years. The birth rate was 40·6 per thousand. Average number of terminations was 5·6 as compared to 3·5 in Singur (1944), 3·2 at Saktigarh (1955) and 3·4 at Dabra (1955-56). The fertility rate was 224·3. Child birth index was 5·6, child loss index 2·8 and

child survival index 2·8. Only 4·0 per cent of the mothers availed themselves of antenatal care, and 73·0 per cent of deliveries were conducted by untrained dais. Only 3·0 per cent of the married females (15-45 years) practised family planning (foam tablets) and the incidence of 'improvident maternity' was 50·0 per cent as compared to 42·8 per cent in India (1951 Census).

Morbidity

The average villager of the area did not consider himself 'sick' unless his physical and physiological states rendered him unable to perform his normal work. There was no yardstick to measure when he was 'sick' and when he was 'well' except by his own feeling. Hence the assessment of morbidity was based on the villager's own version suitably modified by clinical and laboratory examinations. The study of dispensary records also did not reflect the actual incidence and prevalence of sickness.

Information was collected regarding (a) sickness at the time of survey and (b) sickness during past twelve months. The latter presented some difficulty, the memory of such an occurrence being short unless it was recent or of a nature to have affected the family or the individual severely.

At the time of survey 146 persons (16·9 per cent) were ill—3·3 per cent being acutely ill, 10·2 per cent chronically ill and 3·3 per cent in indifferent health. 11·7 per cent of the male population was sick in comparison to 5·2 per cent of females. 57·0 per cent of the sickness was in the age group 20 years and above, while 43·0 per cent was in lower age groups. This increased incidence in higher age groups was due to the sickness being of a chronic nature. The principal causes of sickness at the time of survey are shown in Table 4.

Table 4—Showing Principal Causes of Sickness at the Time of Survey (according to Sex)

Disease	Male	Female	Total
Malaria	5	1	6
Avitaminosis and other deficiency states	14	1	15
Anaemias	7	3	10
Diseases of eye	5	5	10
Diseases of ear	4	1	5
Influenza	6	1	7
Bronchitis and tuberculosis (?)	11	5	16
Other respiratory diseases ...	3	2	5
Diarrhoea and enteritis ...	6	1	7
Diseases of female genital organs	—	4	4
Skin infections	9	3	12
Arthritis and rheumatism ...	9	5	14

The bronchitis and tuberculosis group formed the most common cause of sickness, followed closely by avitaminosis and other deficiency states. All the investigations with regard to tuberculosis could not be done for various reasons and therefore bronchitis and tuberculosis have been grouped together as some of the cases in this group appeared on clinical examination to be those of tuberculosis. These two groups together caused more than one-third of the total sickness. Incidence of malaria was low, the area under survey is classified as 'hypoendemic'. Increased incidence of sickness in males was also the experience in Dabra (1955-56). 76·0 per cent of sickness was in the illiterate and newly literate persons. 44·0 per cent of the families in whom sickness was present belonged to the annual income groups of Rs. 450 or less, while 39·0 per cent belonged to the income group of Rs. 450 to Rs. 1,200 and only 17·0 per cent belonged to the income group of above Rs. 1,200. Thus low economic conditions and increased sickness went together. No particular occupation was affected by increased sickness. Only 36·0 per cent of people found sick at the time of survey, took advantage of the primary health centre, Sarojini Nagar, or of any private medical practitioner. Analysing the causes for not obtaining any aid in the above cases, it was found that in 64·0 per cent cases it was due to poverty and ignorance of facilities available, and in the rest it was the absence of faith in modern medical treatment. It is a matter of concern that in spite of there being two State dispensaries, one at Sarojini Nagar and the other at Amausi aerodrome, accessible in all weathers and within quite reasonable distances from the villages under survey, the people were not utilising the existing facilities to the extent possible or desirable.

Table 5 shows the sickness, according to age, during the past twelve months. The morbidity rate was 370 per thousand and was higher in comparison to 292 in Saktigarh (1955) and 220 in Dabra (1955-56). The morbidity rate of the more important diseases of the area under survey, Saktigarh (1955) and Dabra (1955-56) are compared in Table 6.

Morbidity from preventible diseases like enteritis, anaemia, typhoid fever, diseases of eye and chickenpox was higher in Sarojini Nagar area as compared to Saktigarh (1955) and Dabra (1955-56).

37·2 per cent of the population suffered from one or more sickness during the past twelve months as compared to 42·0 per cent in Singur (1944), 29·2 per cent at Saktigarh (1955) and 20·7 at Dabra (1955-56). Thus of every three persons one became sick at least once in the year and this

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TABLE 5—SHOWING THE FIRST SICKNESS DURING PAST 12 MONTHS (ACCORDING TO AGE)

Cause of sickness	Age in years					Total	Per-centage
	0-5	6-10	11-20	21-50	50 and above		
Fevers including malaria	9	17	22	10	3	61	18·7
Influenza ...	14	8	14	12	10	58	17·8
Enteritis ...	14	4	6	6	5	35	10·7
Bronchitis and tuberculosis	4	4	5	6	5	24	7·3
Chickenpox ...	3	4	7	1	—	15	4·6
Anaemia ...	2	—	1	7	4	14	4·3
Typhoid fever	2	1	4	3	2	12	3·7
Diseases of the eye ...	1	2	1	1	3	8	2·4
Asthma ...	1	—	—	3	4	8	2·4
Smallpox ...	5	—	—	—	2	7	2·1
Rheumatism ...	—	—	2	1	4	7	2·1
Arthritis ..	—	—	—	3	4	7	2·1
Malnutrition	4	1	1	—	—	6	1·8
Filariasis ...	—	—	—	3	2	5	1·5
Skin diseases	1	—	2	1	1	5	1·5
Other diseases	4	5	17	19	10	55	16·8
Total ...	64	46	82	76	59	327	—

TABLE 6—SHOWING COMPARISON OF MORBIDITY RATE PER THOUSAND OF MORE IMPORTANT DISEASES

Cause of morbidity	R.H.C., Sarojini Nagar (1959)	Saktigarh (1955)	Dabra (1955-56)
Fevers including malaria	70	80	98
Enteritis (diarrhoea and dysentery) ...	40	26	13
Bronchitis (all respiratory diseases, excluding tuberculosis) ...	27*	12	13
Chickenpox	17	not available	3·6
Anaemia	16	1	2
Typhoid (typhoid and paratyphoid) ...	14	21	8·3
Diseases of eye ...	16	2	4·6
Asthma	10	1	1

* This also includes tuberculosis

figure excluded minor ailments which the villager did not consider to be 'sickness'.

The average number of days lost per sick person from all causes was 30 days in comparison to 67 days in Dabra (1955-56). The estimation of days lost is on the low side. Sickness of over six months duration was not included, because the period stated was very vague.

30 per cent of those who had one sickness had a second or subsequent sickness during the year. Persons belonging to the higher age groups suffered more from a second or subsequent sickness.

Stools of 574 persons were examined and 58·6 per cent showed one or more intestinal parasites. Stools of more males (38·9 per cent) than females (19·5 per cent) were positive to parasites, due probably to the increased chances of infestation in the course of work in the fileds. 51·0 per cent of the stools were positive for ankylostoma. No occupation was particularly associated with heavier stool infestation. 3·6 per cent of the stools examined showed ascaris. In spite of the wide infestation with ankylostoma, the clinical manifestations were very few. This wide prevalence of worm infestation was the result of poor environmental conditions, viz., the universal practice of defaecation in the fields and of walking bare-footed. 14·2 per cent of the 352 night blood films examined showed the presence of *W. bancrofti*. This is comparatively a high incidence in the rural area of central Uttar Pradesh which has an infestation rate of 9·5 (Singh, 1960). In view of the fact that five cases of clinical filariasis were present, it seems the disease is gaining ground in the area.

MORTALITY

34 deaths occurred during the year of survey. The mortality rates are shown in Table 7.

TABLE 7—SHOWING A COMPARISON OF MORTALITY RATES OF DIFFERENT AREAS

Rates	R.H.C., Sarojini Nagar	Dabra (1955-56)	Saktigarh (1955)	U.P. (1953)
Crude death rate* ...	39·4	16·4	6·7	24·0
Perinatal mortality rate	128·2	—	—	—
Neonatal mortality rate	108·1	—	—	—
Infant mortality rate†	189·1	135·0	82·0	104·3
Maternal mortality rate	5·1	—	7·8	—

* Smallpox and tuberculosis were each responsible for 17·6 per cent of the deaths. The high death rate in 1958-59 was due to epidemics of smallpox and cholera, the latter being responsible for 5·9 per cent of the deaths, and the two together being responsible for 23·5 per cent of the total death rate. The death rate in the area of Sarojini Nagar Development Block in 1958-59 was found to be 17·3 per thousand as revealed by a survey carried out in a population of 17,264 in connection with a family planning research project.

† The break down of infant mortality rate in percentage was: tetanus 14·3; birth injuries 14·3; infection of the newborn 28·5; diseases peculiar to early infancy 14·3; smallpox 14·3; not known 14·3.

TABLE 8—SHOWING DEATHS DURING THE YEAR ACCORDING TO CAUSE, SEX AND AGE GROUP (MAY 1958—APRIL 1959)

Cause of death	Age groups								Total	Rate per 1,000
	Male				Female					
	Below 1	1-5	6-15	Above 16	Below 1	1-5	6-15	Above 16		
Tuberculosis of respiratory system	—	—	—	1	—	—	—	5	6	6·96
Tuberculosis, non-pulmonary	—	—	—	1	—	—	—	—	1	1·16
Typhoid fever	—	1	—	—	—	—	—	—	1	1·16
Cholera	—	—	—	2	—	—	—	—	2	2·32
Dysentery, all forms	—	1	—	—	—	—	—	—	1	1·16
Meningococcal infections	—	—	—	—	—	—	—	1	1	1·16
Smallpox	—	1	—	—	1	3	1	—	6	6·96
Infective and parasitic	1	2	—	1	—	—	—	—	4	4·64
Anaemia	—	1	—	1	—	—	—	1	3	3·48
Chronic heart disease	—	—	—	1	—	—	—	—	1	1·16
Pneumonia	—	1	—	—	—	—	—	1	2	2·32
Childbirth	—	—	—	—	—	—	—	1	1	1·16
Birth injuries	1	—	—	—	—	—	—	—	1	1·16
Infection of the newborn	2	—	—	—	—	—	—	—	2	2·32
Disease peculiar to early infancy	1	—	—	—	—	—	—	—	1	1·16
Not known	1	—	—	—	—	—	—	—	1	1·16
Total	6	7	—	7	1	3	1	9	34	39·4

The death rate from smallpox was 696, from tuberculosis 696 and from cholera 232 per 100,000. The high death rate from tuberculosis is also supported by the family survey conducted by medical interns in the villages of the rural health centre, Sarojini Nagar, where in 37 families having a total population of 240, surveyed between July to September, 1960, five cases of tuberculosis were found, giving a prevalence rate of 2,083 per 100,000 of the population. The causes of death by age and sex are shown in Table 8.

The chief causes of death were tuberculosis, smallpox, infectious and parasitic diseases, anaemia, cholera and pneumonia. Tuberculosis was the cause of death of 5 females over sixteen years of age. This is of special significance as they had fallen victims to the disease due to the stress and strain of repeated childbirth. In a recent study of the social aspects of tuberculosis in some tuberculous families in Lucknow (Prasad *et al*, 1960) it was found that in 25·0 per cent of the females pulmonary tuberculosis was precipitated by repeated pregnancies or childbirth. Five females below 16 years of age died of smallpox, the reason being that they were not vaccinated. Of the two sexes, the female children attended school in a much smaller proportion than the males, and almost all school children were vaccinated. Only 50·0 per cent of children of 0-9 years age had primary vaccination. Tuberculin positive rate for the age group 0-14 years was 70, and this was much higher in comparison to that in the rural areas of Uttar Pradesh which has a rate of less than 40. The reason for such high rate of positives in early age groups was the presence of large number of open cases of tuberculosis in the population. This was substantiated by the fact that the disease had claimed seven lives during the previous twelve months.

Cholera was not a recurring feature of the area. The very high infant mortality, neonatal mortality and perinatal mortality rates were features of the area. They most appropriately reflected the poor health of the mothers and infants due to poor environmental conditions, lack of adequate and nourishing diet, ignorance, superstition, and inadequate antenatal and postnatal care and domiciliary midwifery services which were not availed of by the mothers. This is apparent from the fact that (a) only 4·0 per cent of the expectant mothers had availed themselves of the antenatal care during the past twelve months as compared to 88·8 per cent in Uttar Pradesh in 1956, (b) 73·0 per cent of the deliveries was conducted by untrained dais and (c) infant mortality rate was 189·1. With proper health education and better organisation of the services, it is felt, much can be achieved towards the prevention of such heavy loss of life particularly in early age.

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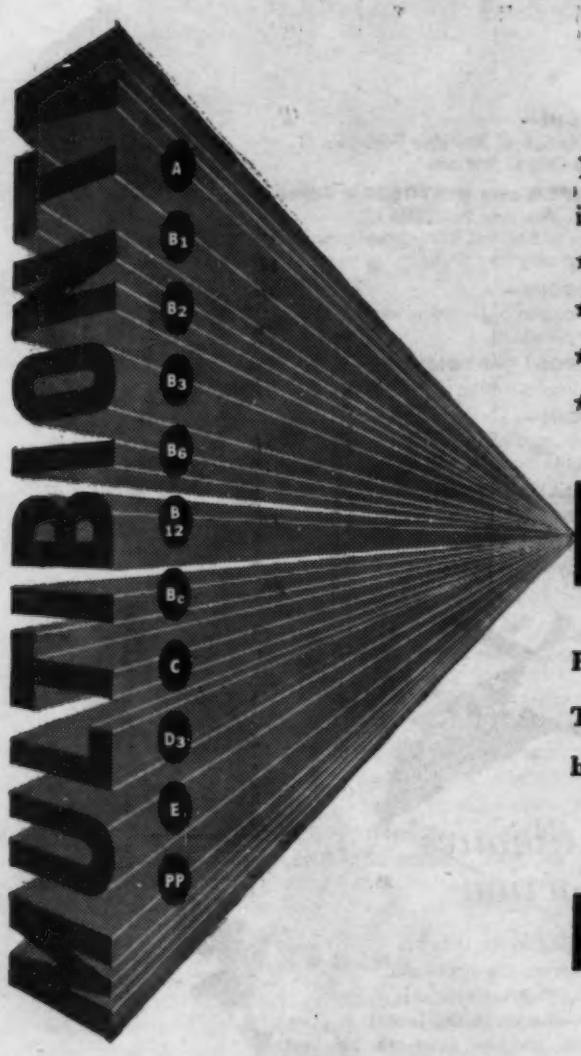

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Summary

A general health survey of a group of villages in the Rural Health Centre, Sarojini Nagar, was carried out in 1959 with the object of studying the present level of health of the people of the area and the socio-economic factors that influence it.

The area is a fertile and flat plain which is thickly populated. The weather is hot and humid in summer and cool during winter.

862 persons from 164 households were included in the survey. Only 26·0 per cent of the population was literate. 71·3 per cent of earning members was engaged in agriculture. The average size of a family was 5·3 and average land holding per family was 5·3 acres only.

The average annual *per capita* income was Rs. 190·00, the expenditure was Rs. 176·00, and 52·0 per cent of the families were in debt. 78·6 per cent of the income was spent on food and the average expenditure per head per year on health was Rs. 6·86, which was 3·5 per cent of the annual income.

98·0 per cent of the houses had no latrines and 88·8 per cent of the families drew drinking water from open wells which showed evidence of pollution. Average number of rooms per house was 2·7 and 86·4 per cent of them did not have cross ventilation.

Marriage was universal and the average age at marriage was 11·8 years for females and the age at first pregnancy was 15·1 years. The childbirth index was 5·6, child loss index 2·8 and child survival index 2·8.

The birth rate in 1958-59 was 40·6, the crude death rate was 39·4 and the infant mortality rate was 189·1. The high death rate was due to epidemic of smallpox and cholera during the year of survey and the prevalence of tuberculosis.

16·9 per cent of the population was sick at the time of survey. 57·0 per cent of the sickness was in persons of age 20 years and above, and 76·0 per cent of the sick persons was illiterate. The low income groups were affected to the extent of 83·0 per cent. Occupation did not materially affect the incidence of sickness.

The bronchitis and tuberculosis group was the commonest cause of sickness followed closely by avitaminosis and other deficiency states. These together caused more than one-third of the total sickness. Only 36·0 per cent of people found sick at the time of survey took help from the primary health centre or any private medical practitioner.

Sickness during the past one year, i.e., the morbidity rate was 370 per thousand. The main causes of morbidity were fevers, influenza, enteritis, bronchitis and tuberculosis, chickenpox, anaemia, typhoid fever, diseases of eye and asthma. 37·2 per cent of the population suffered from one or more sickness during the year and the number of days lost per sick person for all causes was 30 days. 30·0 per cent of those who had one sickness had a second or subsequent sickness during the year.

58·6 per cent of stools examined was positive for one or more intestinal parasites. 51·0 per cent of the stools was positive for ankylostoma and 4·5 per cent for ascaris. 14·2 per cent of night blood films examined showed the presence of *Wuchereria bancrofti*.

The crude death rate was 39·4 per thousand, the perinatal mortality rate 128·2, the neonatal mortality rate 108·1, infant mortality rate 189·1 and the maternal mortality rate 5·1. The death rate from smallpox was 696, tuberculosis 696 and cholera 232 per 100,000. Deaths from tuberculosis and smallpox in femals were much higher than in males. The very high infant mortality, neonatal mortality and perinatal mortality rates were due to adverse physical environment, poor nutritional condition of mothers and infants, ignorance and superstition, and insufficient antenatal, postnatal and midwifery services which were availed of by the mothers.

People were not utilising the existing medical and public health facilities provided in the area to the extent possible.

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CASE NOTE

ATYPICAL CLINICAL MANIFESTATIONS IN RENAL AND URETERIC CALCULOSIS

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It is easy to diagnose a case of renal or ureteric stones when the typical symptoms like fixed renal pain, renal colic and/or haematuria, etc., are present. But calculi may occasionally present themselves in a rather dubious fashion. Eight illustrative cases are reported.

Case Reports

Case 1 (Presenting as backache with scoliosis)—R, a boy aged 9, complained of a dull aching pain in the left side of his back and scoliosis. The pain was present for 7-8 years and was progressive. There was no palpable lump, but the left sacrospinalis muscle was in spasm. The C.N.S. was normal. Plain x-ray revealed a calculus in the left kidney and scoliosis (Fig. 1, *vide* Plate). There was no bony abnormality in the spine either in the anteroposterior or lateral views. Descending pyelography showed calculous hydronephrosis, and the urine contained R.B.C. (+), W.B.C. (+) and albumin (++).

Case 2 (Presenting with a sinus in the loin)—G.S., male, aged 30, was a resident of Gujarat. He complained of a discharging sinus in the left lumbar region for 4 weeks. The condition originated as a painful swelling in the loin with cellulitis 8 months ago. There were no urinary complaints at this time. The swelling was incised, the pus was drained and the wound healed up. But the painful swelling recurred and was again incised. This time a discharging sinus persisted in the loin. The discharge did not have the smell of urine. Caries of the spine or rib was suspected. Opaque medium injected through the sinus led to a hydronephrotic kidney containing about 20 stones (Fig. 2, *vide* Plate).

Case 3 (Presenting as a case of spinal disease)—A male, aged 27, complained of pain in the right loin for 3 months. The pain radiated to the front and along the back of the lower limbs. There was no radiation to the testes and there were no urinary symptoms. The C.N.S. was normal. Plain x-ray showed a stag-horn calculus in the right kidney. There was no osteoarthritis of the spine or prolapsed intervertebral disc. Pyelography showed good function on both sides. Urine contained epithelial cells (+), leucocytes (++) and albumin (+). Urine culture negative.

Case 4 (Presenting with retention of urine)—B.M., male, aged 25, was admitted on 23-5-59 for retention of urine with overflow of 4 days' duration. He gave no history of haematuria, pyuria or exposure. He had not suffered from renal colic and had never passed gravel. Sounding and suprapubic cystostomy showed no pathology in the urethra or the bladder. X-ray showed a stone in the middle part of the right ureter. Urine was clear. The stone was removed.

Case 5 (Presenting symptoms of amoebiasis)—Mrs. H., a nurse, aged 23, complained of colicky pain in the right iliac fossa. There was no radiation and no vomiting. The onset was insidious. The symptoms were of one year's duration. Appendicectomy was done elsewhere for this pain. There was only tenderness in the right iliac fossa. Examination P.V. was normal. Stools showed cysts of *E. histolytica*. The catheter specimen of urine showed presence of R.B.C. (+), albumin (+) and calcium oxalate crystals (++). Plain x-ray showed a calculus in the lower end of the right ureter. Pyelography showed hydronephrosis and hydro-ureter (right).

Case 6 (Presenting as gastric disturbance)—B., male, aged 25, complained of pain in the epigastrium and in the right side of the umbilicus. Pain was increased by taking food. The onset was insidious. The symptoms were of 2½ years' duration and were progressive. There was, however, tenderness in the right renal angle. Stools showed ova of *A. lumbricoides*. No abnormality was detected by barium meal and gastric analysis. Plain x-ray showed multiple calculi in the right kidney with right hydronephrosis. Blood N.P.N. and urea were normal. The urine showed R.B.C. (+), calcium oxalate crystals (+) and W.B.C. (+).

Case 7 (Masked by associated ascariasis)—S.B., male, aged 34, complained of colicky pain in the left side of the abdomen. The pain was not relieved by food and was progressive. The patient had occasional vomiting after admission and gave a history of having passed roundworms in the stools on several occasions. There was only tenderness on the left side of the abdomen. The stools showed presence of ova of *A. lumbricoides*. Plain x-ray and descending pyelography showed a stone in the upper part of left ureter with hydronephrosis and hydro-ureter. Urine was clear.

Cases of fixed renal pain can be quite confusing as Case 8 will indicate.

Case 8—N. M., male aged 24, complained of a dull aching pain in the epigastrium and left hypochondrium for 5 days. It was not related to food. There was no renal colic, haematuria or pyuria. There was no lump but only tenderness

in the epigastrium and left hypochondrium. There was no tenderness in the loin. The urine showed calcium oxalate crystals (+), pus cells (a few) and R.B.C. (+). Plain x-ray and I.V. pyelography showed a calculus in the upper part of the left ureter with slight hydronephrosis.

Discussion

Cases 1, 2 and 3 indicate how attention may be erroneously focussed on the spine instead of the kidney. In Case 1, however, a spinal disease could be considered unlikely for the following reasons. Careful examination of the spine (particularly its movements) and the C.N.S. revealed no abnormality. Again the patient was aged only 9 years, and so conditions like osteoarthritis and prolapsed disc cannot be seriously considered. However, tuberculosis or pyogenic osteomyelitis of the spine must be excluded. In these conditions, there would be obvious limitation of spinal movements and local signs of inflammation (if not of abscess formation), fever (mouth temperature under the tongue for 5 minutes) and a raised E.S.R. would also be found. All these signs were absent in Case 1. The sacrospinalis spasm (causing the scoliosis in Case 1) could be explained by the presence of a certain amount of perinephric inflammation.

In Case 2, the absence of urinary symptoms was the main cause of confusion. It is difficult to explain the absence of urinary symptoms. Affection of the spine could not be considered likely, since some and not all the movements of the spine were limited. This state of affairs would be more suggestive of an extra-articular affection. However, affection of the transverse and spinal processes could still be possible. The history and character of the sinus could have helped us to exclude tuberculosis of the spine. The history of painful swelling is more suggestive of an acute abscess. Of course, even though cold abscesses can appear 'hot' due to secondary infection, the repeated appearance of a 'hot' abscess would make one think more in favour of a pyogenic infection. Again if the cause of the sinus was tuberculosis, the opening of the sinus should show the features of a tuberculous ulcer.

Pyogenic osteomyelitis of the rib would be difficult to exclude. But in this case the sinus would lead to the rib. The absence of urinous smell in the discharge could be explained by the lack of adequate functioning of the kidney tissue.

It is difficult to explain the type of radiating pain found in Case 3. The patient was too young (27 years) to have osteoarthritis of the spine. The history, physical examination and investigation also excluded a prolapsed disc and tuberculosis of the spine. The distal arterial pulsations and the C.N.S. were normal, thus excluding conditions like aneurysm of the aorta and spinal cord diseases. The absence of any urinary symptoms further confused the issue. It was fortunate that an x-ray investigation was considered essential for the proper investigation of this case. It was in this way that the renal calculus was observed.

Cases 1, 2 and 3 thus illustrate the value of x-ray investigation for persistent painful affections of the back.

It is unlikely that a stone in the middle of the ureter would cause retention of urine. But this was so in Case 4. Retention may be possible in a case like this if small fragments of the stone pass down and get obstructed in the intramural part of the ureter. Again the impacted stone in the middle of the ureter could possibly cause retention if it gave rise to severe renal colic. But Case 4 gave no history of renal colic. Investigation of the urethra and suprapubic cystostomy revealed no pathology in the urethra or bladder. This case emphasises the necessity of an x-ray examination of the whole urinary tract (rather than of a limited portion) whenever urinary symptoms are being investigated.

Cases of fixed renal or ureteric pain particularly when situated only in the front of the abdominal cavity can be very misleading. This confusion can be more intense when the patient does not give any urinary symptoms (Cases 5, 6, 7 and 8). Investigations may confuse the issue in the following way. If a certain positive finding (outside the urinary tract) which can explain the symptoms is detected, one would like to stamp this positive finding as the diagnosis of the case. Thus in Case 5 roundworms were detected in the stools. These parasites could certainly produce the symptoms that the patients complained of. One is usually reluctant to make a dual diagnosis in a single case and hence the presence of renal and ureteric stones might be missed. Nevertheless, one should be cautious when *E. histolytica* and roundworms are found in the stools.

Now Case 5 was rather unfortunate. Apart from being misdiagnosed, she underwent an unnecessary operation. Appendicectomy was done on her. This case also serves to exemplify the following point. If appendicectomy is done when the diagnosis is not very certain (and x-ray facilities are not readily available), the ureter should always be explored at the time of the operation.

There was one clear clue in Case 5 pointing to the urinary tract. Her urine (catheter specimen) showed R.B.C. (+) and calcium oxalate crystals (++).

The microscopic appearance of the urine was also useful in Cases 1, 3, 6 and 8. Case 6 presented itself as a case of gastric disturbance and was being investigated for the peptic ulcer. There were no positive findings but the urine showed R.B.C. (+), calcium oxalate crystals (+) and W.B.C. (+). This led to investigation of the urinary tract, microscopic appearance of the urine being a very helpful guide in a misleading case.

Summary

Eight cases of renal and ureteric calculi presenting in an atypical way have been described and discussed.

Acknowledgments

I wish to thank the Dean of the K. E. M. Hospital and the Superintendent, Lokmanya Tilak Municipal General Hospital, Bombay, who have offered every facility for the study of these case. I also thank Dr. K. N. Kamdar, for permitting use of his case (Case 2).

JOURNAL OF THE
INDIAN MEDICAL ASSOCIATION

CALCUTTA, APRIL 16, 1961

WORLD HEALTH DAY

The World Health Day was observed throughout India and other member countries of the World Health Organisation on April 7.

The theme chosen for this year's observance was Accidents and Their Prevention. As the Director-General of the World Health Organisation in his message points out, "in the world today, accidents cause more death than any single illness except cancer and cardiovascular disease. In many countries accidents kill more children from 5 to 19 than all other causes combined. They take a greater toll in young lives than any war the world has yet known."

It is obvious therefore that accidents are an important subject of study. Unfortunately however the subject has not received the same attention as an ailment of equal gravity.

In spite of the complacent idea that "accidents will happen," it should be emphasised that they are far from chance happening but are really the end result of a chain of events. By proper planning of work and adopting safety measures accidents, it has been found, can be lessened both qualitatively and quantitatively.

"There is evidence", says Dr. M. G. Candau, "that the majority of accidents happen in situations which are generally thought to be 'safe'. About half of all accidents happen in the home, and children are the principal victims. Two-fifths of all fatal accidents to children between one and four years of age take place in or around the home. Prominent causes are burns and poisoning which, even if not fatal, are generally serious. Yet almost all could be avoided by a little extra vigilance and a few simple precautions."

The roads take a large toll of human lives. The appointment of Dr. Leslie G. Norman, therefore, by the World Health Organisation, to prepare a report on road traffic accidents, with special reference to epidemiology, causative factors and prevention, is therefore welcome.

The problem of accidents and especially their prevention is a complicated one and needs the conjoint efforts of doctors, psychiatrists, engineers of many categories and social workers.

TAXING HEALTH

Drugs and medicaments are not luxury goods. People do not buy and consume them just for pleasure but because they are necessary. So the prices of drugs and medicaments must be kept as low as possible.

India's new budget contains several tax proposals which flout this salutary principle and will mean in practice, the denial of live-saving drugs to the common man. The prices are already high and further rises due to the fresh levies will gravely react on the people.

We may cite for instance the levy of 10 per cent *ad valorem* on finished product per unit of non-alcoholic patent and proprietary medicines. Thus a bottle of proprietary medicine which now sells at Rs. 5·00 will cost the consumer more than Rs. 5·50.

But that is not all, for the packing will cost more than before. The tax has been increased on soda ash and glassware. Soda ash is an ingredient for making glass and has already to pay excise duty. This finished glassware again is subject to further duty thus augmenting the cost another stage. The tax on board and millboard, bakelite and cellophane all of which are used in packing will rocket the price further up.

Glycerine, a component of many a medicament, has also been saddled with an excise levy.

The new bill providing for certain readjustments in the excise duty on medicines and toilet preparations containing alcohol that has been placed before the Lok Sabha will mean a levy of Rs. 7·00 per litre irrespective of whether the preparations are consumed as ordinary alcoholic beverage or not. This is certainly not going to help the people, for the so-called readjustment will mean an increase of 640 per cent on the existing rates.

We may further add that the Railway authorities do not consider drugs and medicines as special commodities but simply as general merchandise. As such there had already been imposed a 10 per cent freight surcharge on them. Another addition of 10 per cent has been made in this year's budget.

The tax proposals all details of which we have not discussed are supposed to finance the plans which presumably are to help the people. It cannot be achieved by taxing health.

We are firmly of opinion that not only must every kind of drug and medicament be freed from all levies including excise duty and sales tax, but all raw materials, finished products, machinery and plants used in the manufacture of drugs should also be exempt.

GENERAL PRACTICE DIGEST

BRETYLIUM TOSYLATE IN THE TREATMENT OF HIGH BLOOD PRESSURE

Bretylium (darenthin) is one of the benzyl quarternary ammonium derivatives that specially block the peripheral sympathetic nervous system at the level of the post-ganglionic adrenergic neurone, without producing inhibition of the effects of injected or endogenous adrenaline or noradrenaline and without effect on the parasympathetic system or the central nervous system. The drug is singularly free from unwanted pharmacological effects when given in therapeutic doses. Nasal stuffiness has not been troublesome.

Absorption of bretylium is most rapid when fasting and slowest after a large meal. Incomplete absorption from the gut is its main disadvantage. It has no tendency to cause paralytic ileus.

Dosage and administration—Bretylium (darenthin) is available as scored 200-mg. tablets. In very sensitive patients a single nightly dose of 100 to 200 mg. is sufficient for good control of blood pressure throughout 24 hours. But most patients require larger doses, given in 2 or 3 divided doses. Most patients are controlled by 600 to 1800 mg. daily. The initial dose should be small (e.g., 300 mg. daily). This can be increased by 100 to 200 mg. daily until the optimum dose is reached.

The greatest reduction of blood pressure usually occurs on first thing in the morning. If the morning dose is taken before breakfast troublesome hypotension may occur. This can be mitigated by taking the dose after meals or by reducing the morning dose.

Sudden falls of blood pressure have occurred occasionally in patients with a stable dose of the drug. This may be due to absorption of a higher proportion of the oral dose than usual. Accumulation of the drug occurs in patients with greatly impaired renal function. For several days after stopping treatment patients may show a fall of blood pressure on standing. In these patients the dosage should be increased very slowly.

The drug is practically free from side effects. An average patient requires ten tablets (2 g.) daily. A small number of patients require a larger dose. These patients should be given chlorothiazide as an adjuvant, for this drug increases sensitivity to bretylium. In resistant cases combination with a ganglion-blocking drug may be worthy of trial.

Indications—Most patients with high blood pressure fall into one of the three groups, viz., (1) those in whom treatment is mandatory, (2) those in whom treatment is desirable, and (3) those in whom treatment is usually not desirable.

All patients with malignant hypertension (papilloedema) and those with retinal haemorrhages and exudates without papilloedema fall into group 1. Impaired renal function is not necessarily a contraindication to treatment. All patients with recurrent hypertensive heart failure or with nephritic hypertension fall into group 2. The so-called 'benign essential hypertension' cases and also asymptomatic cases without left ventricular strain fall into group 3.

Young hypertensives have a poor prognosis if untreated and treatment may be advisable at much lower pressure levels than in older people.

The presence of vascular disease of the brain or heart substantially increases the risk of treatment. Caution is necessary in patients with angina, for there may be a real danger of causing a stroke or a myocordial infarction as a direct result of treatment. This drug may therefore be avoided in patients with a history of occlusive vascular disease.

The choice of drug—The quarternary ammonium ganglion-blocking drugs (e.g., hexamethonium, pentolinium) are very useful when immediate reduction of blood pressure is essential, for example in severe hypertensive heart failure and malignant hypertension. They should be given subcutaneously.

For oral maintenance treatment of hypertension bretylium is the drug of choice except in patients with vascular disease. If 2 g. or more daily of bretylium proves ineffective, 1 g. of chlorothiazide and 3 g. of potassium chloride daily should be added. The serum potassium value should be checked periodically.

Pempidine is a ganglion-blocking drug which is given in divided doses, i.e., four times a day.

Reserpine is given in the treatment of mild hypertension. The dose of the drug should be small. Chlorothiazide by itself is disappointing.

Management of the patient—Patients who have good control of pressure with a ganglion-blocking drug, without side effects, should not have their treatment altered. Transfer to a new drug is not always a simple matter as controls may be lost in the transition period. Frequent observations of blood pressure are essential, and are best done in a hospital. Hard-won improvements in retinitis and heart size can be lost in a few days of uncontrolled hypertension. The treatment of high blood pressure is life-long and demands continued supervision from the doctor and co-operation from the patient. Irregular treatment is both expensive and useless.

Routine examination of follow-up visits should include a record of the standing blood pressure and examination of the retina of patients who have had retinitis. Where the control is good, three- or six-hourly visits will suffice. But if it is poor frequent visits are essential until the blood pressure is reduced. The treatment of heart failure and angina should not be neglected. These patients may require digitalis, diuretics and coronary vasodilators. A yearly check with a chest x-ray and E.C.G. is necessary.

—From an article by C. T. Dollery, *Practitioner*, **184**: 117, 1960.

CURRENT MEDICAL LITERATURE

Effusions in Cardiopulmonary Disease

CARDON, L. (*Ann. Int. Med.*, **53**: 765, 1960) from the Department of Medicine, Northwestern University Medical School, Mount Sinai Hospital, and Cook County Hospital, in dealing with the significance of small pleural effusions in cardiopulmonary disease, and some other observations on pleural fluid in general writes:

A relatively small pleural effusion may precipitate a critical degree of dyspnoea and air hunger and even cause death, in the presence of antecedent cardiac and pulmonary disease which already seriously interferes with pulmonary function and causes difficulty in breathing. As little as 500 ml. may be of significance in this regard.

This situation occurs most commonly in middle aged or elderly individuals with coexistent congestive heart failure and pulmonary emphysema or fibrosis; but a summation of other pathologic processes in the lungs (infarction, pneumonia, atelectasis, etc.) in the presence of heart disease or failure may similarly enhance the final asphyxial effect of a small increment of pleural fluid.

Recognition and mechanical removal of a small pleural effusion by thoracentesis under these circumstances provide great palliative benefit, and are frequently life-saving.

Dogmatic and axiomatic statements that, in all cases, pleural fluid is not to be tapped unless the upper level reaches a certain arbitrary point (such as the angle of the scapula) condemn many patients to needless suffering and death.

Diagnosis of a small effusion in the presence of heart failure and emphysema may be difficult. It is based mainly on a high index of suspicion that any degree and extent of impairment of resonance in the lowermost portions of the posterior aspects of the thoracic cage may be due to pleural fluid; and the free use of exploratory puncture, properly performed, to test this suspicion.

Chest x-ray is frequently misleading and not reliable. Significant amounts of pleural fluid (500 to 1,000) may not be detected in the posteroanterior view at all, or may appear merely as "blunting", "obliteration" or "haziness" of the costophrenic angle.

The presenting clinical picture is frequently that of acute pulmonary oedema, which obscures the diagnosis of pleural fluid, and is relieved only when the pleural fluid is removed by thoracentesis.

"Refractory heart failure", and digitalis intoxication due to over-medication, occur commonly due to unrecognised pleural fluid.

Violent restlessness (refractory even to massive doses of sedatives and opiates) inexplicable breathlessness, extreme dyspnoea, and refusal of oxygen therapy by any avenue of administration, are common symptoms of hidden pleural fluid under the circumstances being discussed, and are relieved at once by thoracentesis.

Mental and cerebral symptoms simulating and often mistakenly diagnosed as senile or toxic psychosis may be caused by asphyxia due to pleural fluid, and be relieved only after thoracentesis.

Early thoracentesis is indicated when any degree of hydrothorax in cardiac failure is associated with a significant degree of dyspnoea.

Coronary Thrombosis, Cerebral Vascular Accident and Pulmonary Embolism in Leprosy

ROGERS, J. H. (*Ann. Int. Med.*, **53**: 746, 1960), Gadsden, Alabama, writes:

Evidence is presented that the incidence of fatal heart attacks, strokes and pulmonary embolism in people afflicted with leprosy is a great deal less than could ordinarily be expected. It is postulated that leprosy, like tuberculosis, provokes a response in the body which has a protective action against these diseases. It is suggested that this is associated with an *in vivo* hypocoagulable state of the blood, mediated through an increase in the plasma globulins. This may be brought about by complexing of the unusual globulins with clotting factors, or by increased fibrinolytic activity, or both. If the concepts developed here prove to be correct, then the basic information necessary for the development of an immunisation against thrombosis is provided.

Cardiovascular Action of Nitroglycerine

HONIG, C. R., TENNEY, S. M. AND GABEL, P. V. (*Am. J. Med.*, **29**: 910, 1960) from the Departments of Physiology and Medicine, The University of Rochester, School of Medicine and Dentistry, Rochester, New York, and the Department of Physiology, Dartmouth Medical School, Hanover, New Hampshire, write:

The effects of nitroglycerine on phasic pressure, flow and myocardial oxygen tension were measured in anaesthetised spontaneously breathing dogs. As aortic pressure fell, cardiac output increased from 10 to 55 per cent for half to three and a half minutes, then fell 10 to 25 per cent below control levels as the diastolic pressure recovered. Prolonged increases in flow depended upon adequate thoracic blood volume, sympathetic tonus and release of pressor amines. Under conditions most closely resembling those in man, measurements in dogs indicated a rise in left ventricular external work of as much as 25 per cent. Despite this additional load, myocardial oxygen tension increased. In contrast, when venous return was compromised both external work and myocardial oxygen tension fell. Indirect evidence is presented which suggests that qualitatively similar changes do take place in patients with coronary artery disease. We conclude that nitroglycerine relieves ischaemia by enhancing oxygen delivery rather than by altering load. Changes in chemical and/or mechanical efficiency may also play a role. The determinants of nitroglycerine responses are analysed and the therapeutic implications briefly discussed.

Islet-Cell Tumours and Peptic Ulcers

CHVOJKA, V. (*Ann. Int. Med.*, **53**: 1180, 1960) from the Department of Internal Medicine, University of Texas School of Medicine, Galveston, Texas, write:

Pancreatic endocrine influence on gastric secretion has long been suspected but never conclusively proved. The

report by Zollinger and Ellison in 1955 of two cases of primary jejunal ulcerations and gastric hypersecretion associated with a non-beta cell adenoma of the pancreas tended to confirm the suspected pancreatic influence on gastric secretion. Although the association of islet-cell tumours and peptic ulcers appears to stand on firm clinical ground, the mechanism by which these tumours stimulate the fundic glands remains a mystery; however, a direct hormonal stimulation is suspected. The identification of such a hormone would be of immense value, not only in the rare ulcerogenic pancreatic adenoma patient, but also in the much too common syndrome of gastroduodenal ulceration.

The diagnostic ulcerogenic tumour triad, as characterised by Zollinger and Ellison, appears to be standing the test of time; we may expect more of these patients to be recognised in the future. A total gastrectomy in the peptic ulcer patient harbouring islet-cell tumours appears to be the wiser course of action until the mechanism of this syndrome is elucidated. A case demonstrating this principle is reported.

Recurrent Attacks of Bacterial Meningitis

BOE, J. AND HUSEKLEPP, H. (*Am. J. Med.*, **29**: 465, 1960) from the University of Bergen, School of Medicine, Medical Department B, Bergen, Norway, write:

As the antibacterial treatment of bacterial meningitis becomes more effective, patients with multiple attacks of meningitis are more frequently encountered. In the majority of such cases a lesion of traumatic aetiology is present in the dura, with a craniopharyngeal fistula, certainly in these days of frequent injuries to the head resulting from traffic accidents.

Five patients with multiple attacks of meningitis are described. One of the patients has to date, in the course of nineteen years, survived twelve attacks of meningitis caused by *Haemophilus influenzae*, meningococci and pneumococci.

The only clinical apparent sign of damage after injury to the head may be multiple attacks of meningitis. These may first appear after a long interval of complete freedom from symptoms.

Paraesthesiae in the Hands

KENDALL, D. (*Brit. M. J.*, **2**: 1633, 1960), Consultant Neurologist, South-West Metropolitan Regional Hospital Board, writes:

The carpal-tunnel syndrome comes within the category of minor ailments. Nevertheless, it is not only very common but is also a potential cause of much disability and distress, particularly as a result of its tendency to interfere with sleep. It is a condition which in the past has been all too commonly misdiagnosed and much time and effort have been directed towards treatment of the neck and shoulders in the mistaken belief that the symptoms are related to the "costoclavicular syndrome". The concept of the latter as a common cause of peripheral paraesthesiae dies very hard. I have found, and still find, that the great majority of patients with the carpal-tunnel syndrome are sent to hospital for investigation of "cervical rib" or "costoclavicular compression." It is also common to learn that patients have frequently been subjected to manipulation of the neck and neckstretching with slings before the true diagnosis has become apparent.

Much time and distress could be avoided by the earlier recognition of this condition, and doubt may be readily dispelled by the simple diagnostic (and therapeutic) expedient of immobilising the wrist in plaster-of-Paris.

While it is clear that the disorder is basically an ischaemic one, in which overuse of the wrist and hand plays an essential part, the exact mechanism by which this comes about is not entirely clear. From the available anatomical and experimental evidence, it seems likely that the blood supply to the median nerve in the carpal tunnel may suffer interference either proximally or distally, the former possibly by local intermittent swelling of a degree sufficient to interfere with the branch from the ulnar artery, the swelling or oedema occurring in the tendon sheaths or the carpal ligament or both.

In the case of the distal blood supply, this may suffer interference by direct pressure, externally applied, affecting the branches from the superficial palmar arch.

While there is still some difference of opinion with regard to the "normal" appearance of the median nerve at the wrist and in the carpal tunnel, there was seldom any convincing macroscopic abnormality in the majority of patients submitted to surgery in the present series.

In conclusion, it may be said that this condition, once diagnosed is readily and satisfactorily treated and that the delight of the treated patient makes the disorder one of the most satisfactory of minor ailments encountered in neurological practice.

Pulmonary Emphysema

RICHARDS, D. W. (*Ann. Int. Med.*, **53**: 1105, 1960) from the first Medical and Chest Services, Bellevue Hospital, and the Department of Medicine, College of Physicians and Surgeons, New York, N.Y., in dealing with the aetiological factors and clinical forms of pulmonary emphysema observes:

Chronic pulmonary emphysema is considered in terms of the major aetiological forces producing this disease. Three basic forms are described: (a) chronic bronchitis and emphysema, (b) pulmonary fibrosis and emphysema, and (c) nonobstructive bullous emphysema.

Within the category of chronic bronchitis and emphysema, two chief clinical forms can be distinguished: (a) obstructive emphysema with ventilatory insufficiency, and (b) obstructive emphysema with ventilatory insufficiency and alveolar hypoventilation.

In the emphysema associated with pulmonary fibrosis, the basic aetiologic forces are: (a) traction, and (b) obstruction.

The class of primarily nonobstructive bullous emphysema is presented as a disease in which the aetiologic factor is an essential destruction or "atrophy" of respiratory tissues. Secondary air passage obstruction, however, occurs from various mechanical causes, and is an important and almost inevitable complication in this disease.

Lymphosarcoma

ROSENBERG, S. A., DIAMOND, H. D. AND CRAVER, L. F. (*Ann. Inst. Med.*, **53** : 877, 1960) from the Lymphoma Service, Department of Medicine, Memorial Centre for Cancer and Allied Diseases; the Lymphoma Section of the Division of Clinical Chemotherapy, Sloan Kettering Institute for Cancer Research; and the Department of Medicine, Cornell University Medical College, New York, N.Y., summarise their observations thus :

A review has been completed for the experience at Memorial Centre for Cancer and Allied Diseases with the group of diseases known generally as lymphosarcoma. All histologically proved cases were studied as of January 1, 1958, if admitted to this institution between 1928 and 1953, thus providing a five-year follow-up period.

Histologic pictures were divided into three groups : giant follicular lymphosarcoma, 162 cases; small cell lymphosarcoma, 554 cases; and reticulum cell sarcoma, 553 cases. Patients with manifest leukaemia when first seen at this institution were excluded.

The age and sex distribution indicates a median age for the entire group of 49·7 years, and a ratio of males to females of 1·7 to 1·0.

The frequency of a leukaemia transition was noted in 7·6 per cent of the entire group, and is related to the age and histologic classification.

The objective and subjective response to treatment is presented for radiation therapy, 1,102 cases; for alkylating agents, 326 cases; for antimetabolic drugs, 41 cases; for adrenal steroids and/or ACTH, 158 cases; and for radioactive phosphorus, 71 cases. The frequency of complications of therapy is also presented.

A group of 76 patients undergoing radical surgery is compared to a group with comparable disease receiving nonsurgical treatment.

The over-all five-year survival rate from clinical onset of patients with lymphosarcoma is 28·4 per cent. The median survival from clinical onset is 26·4 months. The survival figures as affected by the histologic group, age, sex, stage of disease, and year of admission are presented. The absolute level of the circulating lymphocytes can serve as a valuable indication of prognosis; the lower the level, the shorter the survival.

It is concluded that radiation therapy remains the treatment of choice for lymphosarcoma, and that no increase in survival can be demonstrated over a period of 25 years, despite the addition of antibiotics, steroids and alkylating agents to the therapeutic programme of conventional radiation therapy.

Dysphagia Lusoria Presenting as a Superior Mediastinal Syndrome

MORRIS, R. (*Brit. M. J.*, **2** : 1558, 1960) from Johannesburg, South Africa, writes :

In adults dysphagia lusoria is due to an aberrant right subclavian artery compressing the oesophagus. This disorder is probably not as rare as the paucity of case reports would suggest; methods are therefore described by which more cases of "globus hystericus" might be found to have an organic basis.

A case is described presenting as chronic superior mediastinal compression; complete disappearance of the symptoms and signs occurred after surgical resection. This is the first known adult patient to be operated upon for the condition.

Chemotherapy of Solid Carcinoma

HURLEY, J. D., ELLISON, R. H., RIESCH, J. AND SHULTE, W. (*J.A.M.A.*, **174** : 1696, 1960) from the Mulwaukee County Hospital, Marquett University School of Medicine, National Cancer Institute, in dealing with the indication, agents and results of chemotherapy in carcinoma observe :

Five hundred patients with advanced cancer have been treated with 5-fluorouracil, nitrogen mustard, triethylene thiophosphoramide or a combination of antitumour agents including methotrexate, 6-mercaptopurine, triethylene melamine and the above three. Palliation was achieved in one out of three patients treated (167 patients) for at least two months. Thirty per cent or 150 of these patients were palliated for three months. Remissions continued for as long as four months in 120 or 24 per cent of the group receiving benefit from these drugs. Fifty-five or 11 per cent of the total group responded for six or more months with significant palliation. No evidence, however, has been presented to suggest that over-all survival has been lengthened beyond that anticipated for those patients with advanced tumours of the types and sites mentioned.

Toxicity is a frequent, and unfortunately, necessary concomitant to adequate antitumour chemotherapy. Toxicity is the therapeutic end point with these agents and the toxic side-effects must therefore be well understood, anticipated, and vigorously treated when they occur. Deaths can and do occur from the toxic side-effects of these drugs and careful appraisal of each patient is necessary before any course of therapy is started.

The most impressive responses to therapy were seen in patients with carcinomas of the breast with 60 per cent responding for two or more months to therapy. There were all gradations of response in the various tumour areas treated from this level to carcinoma of the oesophagus where no response was obtained in 14 patients.

The alkylating agents (nitrogen mustard and triethylene thiophosphoramide) proved most useful for treatment of gastric and hepatobiliary tumours. 5-fluorouracil in repeated courses gave the most worthwhile palliation to patients with primary carcinomas of the colon, pancreas, and breast. Combination of antitumour agents have been of the most benefit in treating patients with renal, pulmonary, and breast cancers.

In general, patients with extensive parenchymal metastases to lungs, liver and brain or both, failed to respond to cancer chemotherapy and in, in fact, the presence of extensive hepatic metastases constitutes a real hazard in treating patients with any of these agents and might well be considered a contraindication to therapy with the agents studied.

Finally, experience suggests that tumour response is better when the patient is treated earlier in the course of his disease and followed with repeated courses of therapy with the agents and dosage schedules outlined.

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CURRENT TOPIC

IMPRESSIONS OF MY RECENT FOREIGN TOUR

C. O. KARUNAKARAN

Member, Health Survey and Planning Committee
Government of India
Past President, Indian Medical Association

I may summarise my chief impressions of the foreign tour recently undertaken by me under the following heads :

Medical Education

The average age of admissions to medical colleges has arisen in all countries and the basic pre-medical training has become more comprehensive. For instance, in Soviet Russia the duration of elementary education was seven years and secondary education three years previously and a good student, who began his elementary education in the seventh year, could enter a medical college when he was 18-19 years. Now the duration of elementary education is eight years and secondary education four years, which means that the total basic pre-medical education lasts for 12 years instead of 10 years.

Another notable change is that 80 per cent of seats are reserved for students who did two years of National Service after matriculation. For these two reasons the average age of admission in medical colleges is now 21-22. And I was told that the students are more mature and standards are higher.

In the American Medical College in Beirut they were selecting students after nine years of school education (primary and secondary). They were admitted in the faculty of science and, after three years of pre-medical study, were admitted to the medical school. Had they continued another year in the science faculty they could have taken a degree. Some students do take B.A. or B.Sc. before they join the medical college; others take a degree at the end of their first year of medical study.

Now they are selecting students after matriculation, i.e., 12 years of school study. Nevertheless, these students have to study premedical subjects in the university for two years and nearly cover the B.A. or B.Sc. course before joining the medical college. The average age of admission is 21.

In London I was told by the Deans of the University College and St. Barts that those students who studied their pre-clinical subjects in Cambridge and Oxford had three years' course there, during which they took a degree in one of the pre-clinical sciences. These students were older, more mature and better equipped than those who completed their pre-clinical studies in one and a half years.

The University College is offering 12 scholarships and St. Barts 4 scholarships annually to students after their pre-clinical studies to enable them to take a degree in one of the pre-clinical subjects before proceeding with clinical studies. It is hoped that by this means a larger number of medical graduates will be better equipped for research and teaching.

I was told that in Scandinavian countries those who joined medical colleges after compulsory military service were found better equipped and more mature.

Another point to be noted is that in the medical schools in Great Britain the pre-medical courses are being discontinued and these subjects are taught in other institutions.

In the light of what is happening in other countries it appears desirable that the pre-medical education should be continued in the science colleges and that in all medical colleges an increasingly large number of seats should be reserved for the admission of students who take B.Sc. with pre-medical subjects as optional. This will also raise the age of admission and ensure better maturity.

The possibility of reserving a certain proportion of seats in medical colleges for those who after passing the pre-University examination do a year's service in rural areas, particularly in community development blocks, also deserves consideration in the light of the recent Soviet experiments. This might not only help in the admission of more mature students but make students better informed of the country's problems and create in them a greater aptitude for service in rural areas.

The teaching of humanities, mathematics, history and culture of one's country is also given importance in pre-medical studies.

Internship and Housemanship

In Great Britain after passing the final M.B. the students are given provisional registration for one year during which there is compulsory house surgeonship. After satisfactory completion of house surgeonship (during which they are paid) permanent registration is granted. Indian universities are following the British pattern in so far as the M.B.B.S. course is concerned; but there is a year of internship in the place of house surgeonship in Great Britain. There is a general complaint that this period of internship is a waste because the interns and house surgeons constitute a motley crowd. Therefore, it has to be considered whether the British pattern, i.e., four and a half years of undergraduate medical course followed by one year of compulsory paid house surgeonship, omittting internship altogether, will not be more desirable for us.

Public Health Orientation

In Soviet Russia there is early deviation for public health, paediatrics, etc., in medical institutes. But they have a doctor for 540 people and soon they will have one for 450. So their pattern may not be suitable to us. The pattern of Sweden and other Scandinavian countries, which gives greater emphasis to public health in the training of medical and paramedical personnel appears more suitable to us.

In Sweden the per capita expenditure on medical care is less than that in Great Britain, but the level of health is higher. This is attributed to greater attention to

the preventive side during under-graduate medical education in Sweden and in the training of para-medical personnel.

Lower Grade Medical Education

The question of an inferior grade of training for doctors came up for consideration by the General Assembly of World Medical Association because the Australian Government had started a medical school in Papua for the "natives", for a lower grade of training. The decision of the General Assembly was that a lower grade of training than what is generally accepted as the basic minimum for all countries was not desirable. I have discussed this question with several medical educationists, especially in view of the reported move of certain Indian States to restart the L.M.P. course. Every one of them was of opinion that India with 58 medical colleges should not take such a retrograde step.

There is one remarkable difference between medical colleges in Soviet Union and similar colleges in other countries. In Great Britain the average number of admissions annually is below 100—they have 2000-1500 admissions in 30 medical schools. In Sweden they admit annually 450 students in five medical schools but the Soviet Union admits about 26,000 students in 84 medical institutions on an average of over 300 per school per annum. In Moscow the First Medical Institute admits annually about 1,500 students and the Second 600 students. Between these two institutes there are over 11,000 medical students. Although the number of hospital beds per admission is more than 10, in most institutes, equipment and staff are minimum for such large numbers and compare poorly with Indian conditions. It appeared to me that the standards which the students attain in six years is lower than the Indian M.B. standard. But it has to be noted that the student does not get a university degree at the end of six years. Further training for at least three years is necessary for taking the equivalent of a university degree. Although annually about 20,000 complete their medical education only about 2,000 take the equivalent of a university degree.

Condition of Practice

Only persons possessing the prescribed qualification can hold themselves out as doctors in Soviet Union, Yugoslavia, Egypt, and Lebanon. In other countries although quackery is not a penal offence, treatment of tuberculosis, venereal diseases, and other infectious diseases, cancer and diabetes by unqualified practitioners is a penal offence. A few qualified practitioners use homoeopathic preparations also but their number is extremely small.

In Germany, the home of homoeopathy, there is a recognised group called "Healers of medicine". There are 2,585 persons in this list as against 71,036 fully qualified licensed practitioners. These healers have to pass an examination conducted by the Director of Health Services before they are included in the list. They are not eligible for appointment in State Government Service. Homoeopathic practitioners in Germany, who do not possess a basic qualification in Modern Medicine, belong to this class. This is the position of homoeopathy in its place of birth, on which endless tall claims are made in India.

Post-Graduate Education

Only persons who have done three years post-basic study and have subsequently engaged themselves in original work for a period of at least 5 years get a doctorate from a Soviet university. In other countries also it is not ordinarily possible to be recognised as a specialist or take a post-graduate degree like M.S. or M.D. in less than five years after graduation. In Egypt only those who first take a post-graduate diploma are admitted to the post-graduate degree.

The ease with which post-graduate medical degrees are taken by our medical graduates within three years and even in two and a half years as in Bihar, of taking M.B.B.S. degree merits consideration in this context.

The remarks made by Professor Mackie, Director of Post-Graduate Education in Edinburgh, and Deans of Colleges whom I met in Great Britain deserve mention. There are over 1,000 young Indian doctors in England holding various junior posts in hospitals. All of them went there for a post-graduate degree and after two or three failures have taken up junior appointments to support themselves. The appalling failure of Indian students in post-graduate examinations is due (1) to their deficiency in basic subjects and (2) to their poor approach to patients in clinical examination. This I was told might be due to dealing with, in a short time hundreds of patients in out-patients. The crowds in out-patients, especially in teaching hospitals have to be drastically restricted not only for the sake of the patients, but for the correct initiation of medical students. It may be interesting to note that in France an insurance practitioner should not examine more than six patients per hour and 40 per day. Professor Mackie told me that the examinations are not stiffer than before and the failure rate in the case of other overseas students is not so high as in the case of Indians. For instance out of 8 students from Singapore during the last five years, seven had taken F.R.C.S., of whom three had also got the London F.R.C.S. It was suggested that, if we could get some examiners from British Universities for our examinations, many might help to establish more uniform standards. It was also suggested that only the best students should be sent there for higher studies and that the selection should be done by the deans of colleges.

Refresher Courses

In Soviet Union it is obligatory that all rural doctors should undergo a four months' refresher course after every three years of service and urban doctors a six months' refresher course every five years. Since they are paid their salary during the period of training this causes no hardship.

In Great Britain the Ministry has made provision for refresher courses for panel practitioners. Financial assistance is given during the period of training and also substitutes are found to look after the work.

In other countries national medical associations arrange for refresher courses. The Indian Medical Association has not yet attained the stature for undertaking this onerous responsibility unaided. The Government will have to provide refresher course for all doctors, both in service and in private practice or will have to assist the Indian Medical Association to organise refresher courses where medical colleges are located and in other suitable places, if the large sums of money spent on medical education are to yield full benefits.

In dealing with medical education I may also refer here to some of the points discussed with the Secretary of the General Medical Council of Great Britain since they have a bearing on medical education in India. The right of the Council to inspect colleges has always been exercised by the General Medical Council and is specifically provided for in the current Act. I was told by the Secretary that both the Government of India and the Medical Council of India had referred this question to them and that they were replying expressing full support to the stand taken by the Medical Council of India. It was also stated that the General Medical Council recognised the degrees recognised by the Indian Medical Council on the strength of the inspections of colleges carried out on their behalf by the Medical Council of India and that, if these inspections were discontinued, there might be difficulties in the British Council in according recognition to our degrees. The recognition which the General Medical Council of Great Britain grants is with reference to individual medical colleges in India and does not constitute *ad hoc* recognition of all colleges affiliated to a university.

Integrated Course of Teaching

A couple of students who had taken the G.C.I.M. diploma of Madras Government had applied to the General Medical Council for temporary registration for higher studies stating that their syllabus was as good as that of M.B.B.S. and that they were taught by teachers having the same qualifications as teachers of medical colleges. I was told that this association of registered medical practitioners with other systems of medicine amounted to "unethical" conduct. A young doctor on the strength of the registration certificate which he had from one of the State Medical Councils was recently granted temporary registration by the General Medical Council which enabled him to secure a junior post in a British hospital. His poor knowledge of medicine was responsible for a very tragic incident. I was told that if the Indian Medical Council had published a register showing in a separate schedule, qualifications which were eligible for recognition by the General Medical Council, this tragedy would not have happened. They want the Indian Medical Council Register to be published soon showing in a separate schedule qualifications having their recognition.

Training of Paramedical Personnel

The number of paramedical personnel is much larger than the number of doctors in all European countries and Soviet Russia. In Soviet Russia, for instance, while there are 381,000 qualified doctors there are 400,000 nurses, 400,000 (midwives including feldscher midwives), 200,000 feldschers (chiefly technicians). While they admit 26,000 students into their medical colleges annually they admit 70,000 students into their 700 medical schools—approximately three paramedical persons for one doctor. In a school I visited in Moscow 600 students are admitted annually and there are 1,500 on the rolls. In a school of that size, with that much equipment and staff, in India the total annual admissions may not exceed 150 and the total strength 500.

The Ministry of Health in Great Britain has also laid down general standards for the training of all categories for para-medical personnel and technicians. Those who do not satisfy these standards are not employed under the National Health Service.

A rapid increase in the number of paramedical personnel and their proper training will be necessary if our public health activities are to make significant progress.

Medical and Health Services

Even Egypt which I visited has one doctor for 2,000 people; Yugoslavia one for 1,600 and Lebanon one for 900. All the other countries have one for 1,000 or less while Soviet Union has one for 540. Against this we have only one doctor for 5,000. In the matter of paramedical personnel the difference is even more striking.

While we have only 0·3 beds for 1,000, Egypt has one bed for 1,000, Lebanon two, Yugoslavia four, Soviet Union eight (by 1963 they will have 10) and Sweden and Great Britain 14 beds per 1,000. These figures indicate roughly to what extent our country is behind in the facilities available for treatment. In Soviet Russia they have now combined preventive and curative services in the rural areas. They carried out an experiment for three years which justified integration. There is the District Hospital with 300-600 beds, with a preventive section for populations of 200,000-300,000. Under the district hospital there are rural hospitals for populations of 10,000-50,000 with 50 to 100 beds and under rural hospitals there are village hospitals with 10 beds for populations of approximately five thousand. Under the village hospitals they have midwifery and feldscher points for populations of 1,000-15,000. Every case of confinement takes place at the maternity point and cases which require greater care than what is possible at their institutions are transferred to the village hospital and from there, if needed, to district hospitals. To some extent this arrangement is similar to what obtains in the districts and taluqs of India, except that the population served by each unit in Russia is much smaller and the staff and facilities available are much larger. This contributes greatly to the success of the Russian scheme. On account of shortage of trained personnel and for other reasons this pattern may not be attainable in our country in the near future. But a scheme which will provide medium-sized hospitals of 100-150 beds at taluq headquarters to serve about 200,000 people with the provision of the major specialities, as well as 15-20 bed cottage hospitals for 15-20,000 people, with at least

two doctors and with fair complement of auxiliary personnel will prove to be a step in the right direction.

One remarkable feature of all hospitals in Europe and Soviet Union is the importance given to physiotherapy, gymnastics and massage.

Out-patient service in major hospitals is limited to cases referred from polyclinics or follow-up of discharged cases. In polyclinics also the crowd is less. Except emergency cases the patients are those who are generally referred by a general practitioner or a smaller centre.

In Soviet Union packets of herbs are also sold in their chemists shops. These are prescribed by doctors and used by patients. These are from their old medical lore, proved efficacious by scientific tests. On seeing this it struck me that our practitioners of modern medicine had failed to explore and utilise in a spirit of sympathy our ancient systems of medicine.

In European countries other than Russia, which provide to their people curative and preventive services of a very high order, the number of doctors in permanent service eligible for pension is comparatively small. In these days of mounting salaries it may be impossible to have as permanent civil servants, on salaries comparable to what is paid to other cadre of officers, the large number of doctors necessary for upgrading and expanding the services to the people. Therefore, it is for consideration if the systems current in Great Britain and Scandinavian countries may not be better for us in the long run. If so how and where the beginning should be made assumes immediate importance. On the other hand, France which was maintaining its curative service entirely on part time basis is contemplating whole-time service as a result of prolonged experiments.

The contrast between the rural health centres which I visited in Yugoslavia and Egypt and the health centres in our country show that the indifference of medical personnel to the preventive side was not only due to a lack of proper orientation but also to the large size of the populations they had to deal with. For instance, the Health Centre of Stara Pazoa, 20 miles outside Belgrade, which served 40,000 people had seven full time doctors (including two interns) and two part-time specialists; further all important specialities, laboratory service, x-ray, B.N.T. and dentistry have also been provided. This area has also five sub-centres, each with a doctor, a nurse and an auxiliary nurse-midwife. The sub-centres have 4,000-5,000 people. Ante-natal and pre-natal care and health protection for pre-school and school children are also provided and these services are well attended to at the centres. The entire country had not been covered in this manner, but they have 221 main centres with 800 sub-centres for their rural areas covering approximately a population of 15 million. This roughly works out at one main centre for about 75,000 and a sub-centre for about 20,000. Their immediate goal, I was told, is to have a main centre for 50,000 and a sub-centre for 10,000. Not only is the size of the population served smaller, but the staffing is on more adequate scale.

In Egypt they are developing primary health centres for 15,000—25,000. One centre Shebermant which I visited had 22,000 people living in 6 villages. The centre has two doctors, a chief sanitarian, a sanitary officer, a head nurse, five health visitors and five assistant nurse midwives—one village which was more than five miles from the centre has a sub-centre, with two assistant midwives. The doctors visit this centre once a week. Four of the six villages have sanitary latrines in 80 per cent of the houses. This is an achievement which Singur or Ponamallee cannot claim to have attained to. The Egyptian villager is not more educated than the Indian villager. Their achievements are better because there is adequate staffing and also the villagers found in the health staff, a greater spirit of brotherhood and less of a sense of official superiority. Our public health workers may perhaps do better if they come down closer to the level of the people in their approach towards them.

In Sweden and Norway they have a health officer for 5,000 to 6,000 people; he has also a cottage hospital under his care. Assisted by health visitors, midwives and sanitarians he is responsible both for curative and preventive services, but his work is more on the preventive than on the curative side. The small size of the population and the larger number of skilled auxiliary personnel enable health officers to discharge their duties efficiently and maintain a high level of national health.

Maternal and Child Health

In this the Soviet Union is definitely well ahead of other countries. Every confinement takes place in maternity homes. Expectant mothers get two months leave before and two months leave after confinement on full salary. When necesary the leave is extended and mothers are sent to sanitaria for recuperation.

There is a comprehensive scheme of services for children from birth till they complete elementary education. Children between two months and one year have nurseries; for such children the nursery has a staff of six nurses and a doctor, for those between one and three years four nurses and a doctor and for children from the fourth to the sixth year there are kindergarten schools with three trained nurses and a doctor for every group of 100 children. They are given well-balanced food at these centres and those requiring expert treatment are sent to polyclinics or paediatric hospitals.

Prophylactic inoculations are begun at these centres and carried through school age. Smallpox vaccination is done within three months of birth and repeated every fourth year so that every person gets the fifth vaccination by the 21st year. Russia has had no case of smallpox for over 20 years except for one case imported from India two years ago which was not diagnosed before death because only very few doctors have had the opportunity to see a case of smallpox. In five days eight million were vaccinated in Moscow and Leningrad and so there was no spread of infection from this case.

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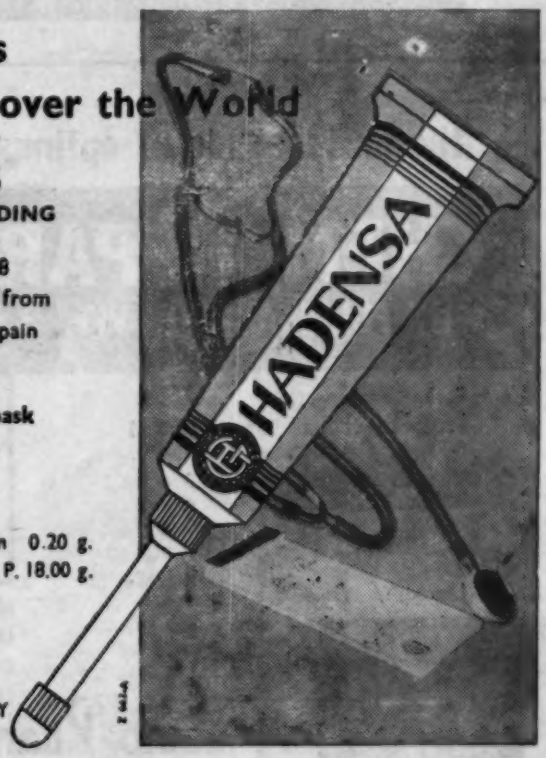

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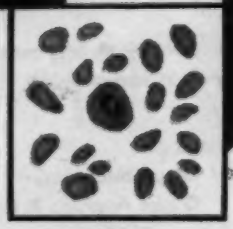

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three doses in the second half of the first year and another dose in the third year. Diphtheria toxoid inoculation is repeated in the sixth, ninth, and twelfth years.

Vaccination against poliomyelitis is also compulsory. As a result of these vaccinations it was pointed out that not only smallpox but also diphtheria has been eradicated. They have no tuberculosis in children now and, after compulsory polio vaccination, the incidence of this disease has also become negligible and the few cases that have occurred were milder. They have closed 12 out of the 16 infectious diseases hospitals for children in Leningrad and these four hospitals are mostly empty.

Smallpox vaccination is compulsory in certain other countries and B.C.G. also in Yugoslavia. But without compulsion the acceptance rate of B.C.G. and triple vaccine is as high as 80-90 per cent in most of these countries.

The advisers of the Ministry of Health in Great Britain are against triple vaccine because they say that the response to a later booster injection of toxoid is poor where the triple vaccine has been previously used.

School Health Services

In the Soviet Union the school health service is a continuation of the health services for pre-school children. All schools with 800 or more pupils have full-time doctors and nurses who refer the pupils when necessary to paediatric polyclinics. There are also school nurses and dentists for schools. School breakfast or lunch given free or at concession rates is the rule.

There is no similar provision for the care of pre-school child even in Sweden and Norway. The nursery schools and kindergarten schools are managed by voluntary organisations which get grants from local bodies. In Great Britain the Ministry of Health, on expert advice, has come to the conclusion that children should grow up at home under the mother's care till they are two years old. It may be stated here that whatever might have been the past practice in Russia now children in their nurseries are not cut off from parents. The working mother is allowed time and encouraged to breast-feed the baby in the nursery at regular intervals. She leaves the baby or child in the nursery or kindergarten on her way to work and takes it back on her way home.

In the matter of school health service, Sweden and Norway are not behind Soviet Union. All schools have school doctors, dentists and school nurses and every child receives a complete and thorough examination at the time of admission and in the fourth year after admission. The examination at the time of admission also aims at detection of mental backwardness and separation of backward and defective children from the normal. Defective children are sent to special schools where they are allowed one or two years, more to complete the prescribed course.

A balanced breakfast or lunch is provided in all schools, at cost price, at half the cost or free according to the capacity of the parents to pay.

Dining halls are kept in such a condition that the pupils get not only a good meal but also get practical knowledge of nutrition and cleanliness in eating. Although school health programme in Great Britain is under the Ministry of Education it is recognised to be equally a public health problem and there is close collaboration between the two ministries, the Chief Medical Officer under the Ministry of Health being also the head of School Medical Service under the Ministry of Education.

National Health Services

In the Soviet Union every citizen gets free and equal facilities for medical care, home visits by emergency squads as soon as a call is made, free consultation and expert advice at polyclinics and hospitalisation and sanatorium treatment, if found necessary. There are ambulance and helicopter services for the free transport of patients at short notice.

Great Britain has sought to provide free treatment to all by the services provided under the National Health Services. But soon it was found necessary to tone down the original scheme by making charges for prescription, glasses, dentures, etc., because the cost of the service has become very high (about 450 million pound have to be paid by the National Exchequer annually), and the preminm paid by employees and employers are being raised. Also the price to be paid for mixtures, glasses, etc., is enhanced and it is proposed that insured persons should pay for hospital treatment according to their capacity. The higher classes and upper middle class not satisfied with the service which they get in Government hospitals are entering into other insurance schemes. The British United Provident Fund Association which had 400,000 subscribers in 1958, had 800,000 subscribers in 1959. They pay £10 per annum as premium for better care in Government hospitals or in private nursing homes. Foreigners resident in Britain who were also getting the benefits of the National Service are not to get that benefit hereafter. A careful study of the evolution of the British National Health Service will show that limitations of finance have brought about significant restrictions in respect of benefits which were provided at the commencement of the scheme.

The experience of Great Britain, during the last 11 years, has shown that even there, on account of high cost, large numbers could not get the timely medical care they needed, prior to the introduction of National Health Service. For instance 1 in 10 had eyes tested and 9 out of the ten tested had glasses prescribed. The same applied to dental and other services. So unless free service on a wider scale than now becomes available many deserving persons will not get timely assistance.

A liberal approach to the expansion of health services can no longer be postponed. The question is, in the light of the experience of other countries, what will be the correct approach.

In between the health services provided by the Soviet Union and Great Britain stand those made available in

the Scandinavian countries by their governments with a fair measure of success. Ninety per cent of the adult population are insured in Sweden and Norway. Since the insurance of parents provides also for services for children under 16, 90 per cent of the entire population can be considered to be covered. The remaining 10 per cent consists of the very rich who pay for their treatment in full or the very poor (2-5 per cent) for whom the respective local authorities provide the necessary health care. Taxation of the individual by the State for social service, "for bringing up children of others," for free medical care for all and for old age pension is so high (20-30 per cent for most wage earners, 50-80 per cent for the higher income groups) that the additional subsidy from National exchequer for providing health services is only about 25 per cent while in Great Britain it is 75 per cent.

I had occasion to discuss the question of Health Insurance with the representatives of Japan and some other countries who attended the World Medical Assembly. The demand for free medical care is growing in all countries and it is being increasingly realised that in Socialist States every citizen has the right for protection from disease and for adequate care during illness. Some States, however, although socialist in pattern are far behind this goal of complete or near complete coverage. In Yugoslavia, an admittedly Socialist State, only about 45 per cent of the population has social security insurance; and the question of the agricultural population (about 50 per cent) is only under active consideration. The E.S.I. scheme and the Contributory Health Insurance schemes have so far touched only a fringe of the problem in India and it has to be considered how in the course of the next 10 to 15 years, ways can be devised whereby the entire population can be covered.

In Egypt the entire student population is brought under a scheme of insurance. Although education is free even at the college level, a fee for medical care is paid by all, starting from 10 shillings in primary schools and going up to one pound in secondary schools and colleges. The scheme which is under consideration by the West Bengal Government by which independent medical practitioners are to be subsidised for free medical service including preventive service and school health to low income groups (those getting below Rs. 500 per month) and limited to a population of 5,000, is an experiment worth trying and watching, as a promising step to provide free medical care to those who cannot be brought under insurance.

In Soviet Union the large army of doctors (1 to 540) and larger army of para-medical personnel are all State Employees. In Great Britain and Scandinavia there is free choice between insured persons and medical practitioners. In Scandinavian countries the insurance company settles the terms of service with the National Medical Association. In Great Britain the Ministry of Health settles the terms of service with the British Medical Association. If in countries having one doctor for less than 1000 people cooperation of the entire profession is considered essential for National Health Service, it is evident that in the country with only one doctor for 5,000 it will be impossible to extend free medical service to the entire population or even school health service, unless the entire medical profession is brought fully into the picture, through the National Medical Association.

Cost of Drugs

The cost of drugs is one of the chief causes of the mounting expenditure on free medical care. The inquiry conducted by the Senate Committee of the U.S.A., recently revealed fully the magnitude of the collusion of unscrupulous manufacturers of drugs with an equally unscrupulous section of medical profession. This has been rightly described as perhaps the worst form of exploitation of mankind because it is generally the needy patient who is exploited. To curb this Dr. Carl Evang, Director General of Health, in Norway, has prohibited advertisement of medical preparations except in scientific journals. He has also stopped canvassing by agents of manufacturers, which he considers as a kind of advertisement. The number of drugs which can be sold or prescribed has been drastically cut down to 1,500 while in England it is 20,000 and in France it is 30,000. I was told that as a result of these steps the cost of drugs has come down by 50 per cent in Norway. The example set by Norway is having its repercussions both in Great Britain and in France and Committees are being appointed to investigate this problem.

In this connection what is done in Egypt deserves consideration. Only the State Government can import drugs and indigenous production is also under State control. Retailers purchase from Government depots and sell at a profit not exceeding 16 per cent.

Another point worthy of note both in Egypt and Lebanon is that only persons with a recognised degree or diploma in pharmacology can own a chemist's shop. If an owner dies, within five years it should be transferred to a qualified pharmacist. The opening of pharmacists' shops by all and sundry, just as groceries are opened, appears to be a factor for promoting the sale of spurious and substandard drugs.

In Egypt and Yugoslavia there has been an increase in deaths from poisoning, the exact cause of which remained a mystery. When I mentioned the folidol tragedy in Kerala in 1958, they were inclined to agree that their cases also might be due to folidol or some similar insecticide. More stringent measures regarding the import, distribution and use of insecticides, they agreed, are urgent public health measures.

The inadequacy of Public Health Laws in India and the deplorable failure to enforce efficiently even the meagre laws which have been enacted are well known. Even in the major cities public health laws are seldom enforced. Denmark's example of having a Public Health division in the regular police force, collaborating with the Mayors of cities and countries in enforcing public health laws is worthy of consideration. Officers of the police force might command greater obedience than the usual type of municipal subordinates. Years of public health propaganda and persuasion have failed to evolve significant response from the public. So an attempt at compulsion will not be unjustified.

Family Planning

In the Soviet Union there is a paradox of the State honouring mothers with a large number of children as well as provision of instruction in methods of limitation at all ante-natal and post-natal clinics. Abortion for economic reason in the early months of pregnancy, is also permitted. Educated women without any inducement limit the size of the family. In European Russia the average number of children is only three per mother while in Asiatic Russia it is five.

In Scandinavian countries where the birth rate is very low and the Governments give subsidies for children, family planning is practised without any pursuasion. The Health Insurance Company arranges for free instruction and also free supply of contraceptives if required. By this means they save on maternity benefits.

Family planning advice and contraceptives are given in Government dispensaries and hospitals in the district of Cairo and some other centres, as the beginning of a wide national programme. I was told that although ignorant Muslims think that "contraception" is a violation of God's will, savants of Islam say that there was nothing in the Holy Koran against contraception. On the other hand, it is argued that the emphasis which Islam has placed on material happiness and prosperity of the family and of the community is an indirect invitation to the adoption of the size of the family.

In Yugoslavia the northern half is almost entirely Catholic. But the birth rate is low (17-18 per mille) and contraception is widely practised. The people are educated and are akin to other European races. In the South which has a non-catholic population, the birth rate is as high as in India. Economically and educationally the people are very backward.

Acceptance of "Family Planning" everywhere depends upon the educational and economic level attained by the community. Therefore a widespread acceptance of family planning in India may take years of hard work and educational propaganda before the results of the family planning movement prove to be significant.

NOTES AND NEWS

Dietary Fat and Heart Attacks

For nearly 10 years cardiologists and physiologists have been debating whether the rich U.S. diet is bad for U.S. arteries. At its recent annual meeting the board of directors of the American Heart Association released a report from its "highest medical and scientific body" suggesting that it is. The report, called "Dietary Fat and Its Relation to Heart Attacks and Strokes", was prepared by a special committee headed by Irvine H. Page, research director of the Cleveland Clinic.

The report notes that heart attacks are almost always caused by atherosclerosis, the most common form of artery hardening, and that strokes often have the same cause. The report attributes atherosclerosis to multiple factors, including elevated blood cholesterol, elevated blood pressure, diabetes, obesity and excessive cigarette smoking. The report's recommendations focused on lowering cholesterol levels and weight reduction. It concluded: "The reduction or control of fat consumption under medical supervision, with reasonable substitution of poly-unsaturated for saturated fats (i.e., fats in vegetable oils for those in dairy products and meat), is recommended as a possible means of preventing atherosclerosis and decreasing the risk of heart attacks and strokes."—*Scientific American*, February 1961, p. 74.

Dr. Ramanna Chairman of IAEA-Norway Research Committee

Mr. Sterling Cole, Director General of the International Atomic Energy Agency, and Mr. Gunnar Randers, Managing Director of the Norwegian Institute for Atomic Energy, announced on 14-3-1961 the selection of Dr. Raja Ramanna of India to be Chairman of the Management Committee which will determine the joint research programme in reactor physics utilising Norway's zero power reactor, NORA.

Dr. Ramanna has since 1953 been head of the Nuclear Physics Division of India's Atomic Energy Establishment at Trombay. He was educated at the Universities of Madras and London. He has published scientific papers on neutron thermalisation, fission physics, and nuclear reactions.

Public Health Adviser to Nepal

Dr. M. L. Ahuja, well-known Indian bacteriologist and former Director of the Central Research Institute, Kasauli, and the Pasteur Institute, Coonoor, has been appointed WHO public health adviser to the Government of Nepal. One of his principal tasks will be to help the Government in assessing the country's medical and health needs, and in streamlining the administrative machinery to ensure the effective guidance and supervision of public health activities. As WHO representative in Nepal, he will also help to co-ordinate all assistance in the field of health received by the country from external sources and will advise the WHO Regional Office for South-East Asia on the planning and development of WHO-assisted health projects in Nepal.

Dr. Ahuja has been a member of the WHO Expert Advisory Panels on Biological Standardisation and Rabies, and has undertaken a number of assignments for the Organisation.—*WHO Chronicle*, **15**: 72, 1961.

International Congress of Allergology

The 4th International Congress of Allergology will be held at the Hotel Commodore, New York City, October 15-20, 1961. It is anticipated that this will be a large and interesting meeting for all of those concerned with allergic diseases and related fields of immunology. At the main meeting, there will be simultaneous translations of all papers in English, French, German and Spanish. Prominent physicians and scientists, from all parts of the world, have been invited to take part in conferences, symposia and panel discussions. Among

the subjects to be presented are: Genetics in allergy; Acquired tolerance; Transplantation immunity; Drug hypersensitivity; Contact allergy; General mechanisms in allergy; Mechanisms of antibody fixation; Delayed hypersensitivity; Auto immune processes; Steroid therapy; New methods in allergy, etc.

No Rest Between Ages 18 and 30

Heart specialist Dr. Paul Dudley White says the average man would be far healthier if he followed a few simple rules.

Speaking in Boston he stated that most men "take a holiday" from physical fitness between the ages of 18 and 30. "They pay for it for the rest of their lives. It would do a child of five or six no harm to walk half a mile to school. A child of 10 to 12 could walk a couple of miles, a 17-year-old, if he had the time, could walk five miles or more.

"After that it is up to the individual to adopt positive health habits to keep in trim. If he wants to lead a long and healthy life, a man should keep in training, especially between 18 and 30.

Cobalt Bomb for Treatment of Cancer in India

A Cobalt therapy unit for the treatment of cancer was declared open at the Christian Medical College hospital at Vellore on 15-3-61 by Mr. C. A. Ronning, Canadian High Commissioner in India. The Cobalt unit is a gift to the hospital from the Canadian Government under the Colombo Plan.

Speaking on the occasion, Mr. Ronning said that Canada was moving forward in the research for peaceful uses of atomic energy for the benefit of the future generations.

"Canada", he said, had been one of the pioneers in the field of nuclear studies largely as a result of the construction of NRX experimental reactors at Chalk River, Ontario, which came into operation in 1947. NRX, because of its high power, enabled Canadian scientists to forge ahead in the study and production of radioactive isotopes of high specific activity.

He added, "At Chalk River we now have a new reactor, NRU, in operation with five times the power of NRX. We can now produce much greater quantity of these isotopes in much shorter time. Besides, research work can also be speeded up."

Treatment of Anaemia

According to Dr. Erik Undritz, President of the Swiss Haematological Society the treatment of the various kinds of anaemia was an important problem in India. He claimed that he had demonstrated for the first time by conducting experiments on animals that a particular type of cobalt salt was very effective in the treatment of "Reactive Aplastic Anaemia".

Dr. Undritz, said there were three types of anaemia; one was the iron-deficiency anaemia, which could be treated by giving special iron compounds; the second type could be treated through vitamin B_{12} and the third type of anaemia was what be called "Reactive Aplastic Anaemia. This type of anaemia did not lend itself to treatment either by iron-compounds or by vitamin B_{12}. In this type haemoglobin was not formed.

Dr. Undritz said that though treatment by cobalt compound was known for a long time, they were highly toxic and the patients could not tolerate them. He claimed that the special type of cobalt salt found by him had proved to be tolerable that could be used in appropriate doses. He had also demonstrated by carrying on experiments on animals that cobalt was effective in the treatment of this infectious type of anaemia.

Another problem which, he said, was important to Haematologists was that of leukaemia, otherwise known as cancer of blood cells. By the modern treatment, the life of a patient, if a child, he said, could be extended by a period of three or four years; in this connection, he mentioned a case in the clinic of Professor Fanconi in Switzerland where the life of the patient was extended by eight years. In the case of adults, the doctor said the modern treatment had not been found so effective. Dr. Undritz, also dealt with the treatment of tuberculosis and added that research had shown that the circulation of blood in the upper parts of the body was always less than in the lower parts. This fact brought out clearly the importance of complete rest to the tuberculosis patients so that the blood circulation would be uniform throughout the body.

Large-Scale Production of Multipurpose Food

The first pilot unit in the country for the large-scale manufacture of Indian Multipurpose Food has been set up at Coimbatore in Madras State. The plant which has a capacity of three tons in eight hours is the result of active collaboration between the Central Food Technological Research Institute, the Government of Madras and Sri G. R. Govindarajulu, a leading industrialist of Coimbatore. The Government of Madras have decided to purchase the off-take of the plant for incorporation in the midday meal programme of 2½ lakhs of school children in the State.—*Food Science* **9**: 415, 1960.

Family Planning Programme

Replying to a question in the Lok Sabha on March 6, Shri D. P. Karmarkar, Minister of Health, said that a sum of Rs. 137·55 lakhs was sanctioned for the family planning programme during 1956-60 in the Second Five-Year Plan period. Definite information regarding the expenditure incurred on family planning during 1960-61 was not yet available. Up to December 1960, 1, 492 regular family planning clinics were set up and family planning advice was available from 1,589 medical and health centres in the country.

Oral contraceptives had not yet reached the stage when their use in India could be recommended. Other effective contraceptives were being popularised.

An allocation of Rs. 25 crores had tentatively been made for family planning programme during the Third Five-Year Plan period.

American Audiologist in Calcutta

Dr. John K. Duffy, an American audiologist and speech pathologist and Associate Professor, Department

of Speech, Brooklyn College, Brooklyn, New York, arrived on 12-3-1961 at the invitation of the Indian Medical Association. He is also associated with Lenox Hill Hospital, New York City.

Sponsored by the United States Educational Foundation in India, Dr. Duffy arrived in India on August 1, 1960, as a Fulbright Professor and visited Jaipur, Bombay, Nagpur, Madras, Bangalore, Vellore, Madura and Cuttack.

Dr. Duffy gave a course of lectures and demonstrations on the subjects of audiology, speech pathology, speech and hearing therapy at the Indian Medical Association, Calcutta Branch.

Dr. Duffy visited Seth Suklal Karnani Memorial Hospital, the Medical College and Deaf and Dumb School.

Born in 1913, Dr. Duffy had his degree of Ph.D. from the University of Wisconsin and is the author of a book entitled "Speech and Hearing Hurdles" and numerous other articles on speech and hearing problems.

School of Radiation Medicine

The Government of India has decided to set up a school of radiation medicine. The Defence Minister, Mr. V. K. Krishna Menon, speaking at the concluding function of the month-long lecture series on the occasion of the holding of the Atoms for Health Exhibition at New Delhi, on 13-3-1961 said that the proposed school would provide a much-needed nucleus for research in radiation medicine by both military and civilian medical personnel.

The Defence Minister reviewed the modest progress India had made in the field of radiation medicine, and said that research was already being conducted in this field at the Military Hospital, Delhi Cantonment, where two wards had been reserved for this purpose.

Inoculation Drive Launched at Bombay

An "Immunisation drive" against diphtheria, tetanus and whooping-cough launched by the Lions Club of East Bombay was inaugurated by Mr. Homi J. H. Taleyarkhan, State Health Minister at the Club's clinic at Lalbaug on 18-3-1961.

Mr. Taleyarkhan praised the Lions Club for the many welfare activities undertaken by it, particularly in promoting health consciousness. The campaign launched by the Club to inoculate children against the three diseases was a "new chapter in the history of its social welfare activities," he said. The Minister referred to the various steps taken by the State Government in this regard and said that voluntary organisations like the Lions Club could play a great role in supplementing the efforts of the Government and the municipal authorities.

Referring to the various efforts made to combat tuberculosis he said that emphasis should not only be on the curative aspect but also on preventive measures. He suggested that the Club should start a B.C.G. vaccination centre at its clinic.

Another Chest Clinic for Calcutta

A Mayor's chest clinic, fourth in the series, was opened by Chief Minister Dr. Roy in Baghbazar Street, Calcutta, on 19-3-1961.

Dr. Roy emphasised the importance of nutrition in the treatment of tuberculosis of patients and said that a clinic like this should not be content by offering only treatment to patients. It should also serve as a centre for educating people as to how they were to resist this fell disease, he said.

The Mayor of Calcutta, Mr. K. C. Basu, said the fifth clinic would be opened at Bagha Jatin Colony, Jadavpur, Calcutta.

Medical Research Institutes for Andhra

Two Post-Graduate Medical Research Institutes will be established in Andhra Pradesh—one at Visakhapatnam and the other at Hyderabad—in the Third Plan period, said Major K. N. Rao, Director of Medical Services, presiding over the 38th College Day celebrations of the Andhra Medical College on 5-3-61.

Major Rao, said that in Andhra Pradesh, with a population of 40 million, the doctor-people ratio was, one to nine thousand, which was inadequate indeed. Answering the criticism that too many medical colleges were being established in Andhra Pradesh, Major Rao said, that the medical colleges were established having in mind the regional needs of the State and when the actual needs of Andhra Pradesh with regard to the requirement of doctors was met, these extra medical men could be supplied to other States.

Informal Consultative Committee for Health Ministry

Shri D. P. Karmarkar, Union Minister of Health, told the Informal Consultative Committee of Parliament for his Ministry at New Delhi on 15-3-1961 that the State Governments had tentatively planned to open 21 medical colleges during the Third Five-Year Plan period. The final number would only be known after the revised State Plans were received.

During the discussion on rural water supply, the Minister said he had been informed that a little more provision was proposed to be made in the Third Plan for this purpose.

Referring to the criticism of some members about the progress of health schemes in community development blocks in rural areas, the Minister said that he would wish that people set up health promotion organisations in various places so that individuals could take a sustained interest in sanitation, cleanliness and other preventive aspects of health. The Ministry might even assist these organisations in various ways.

Regarding publication of cheap medical books, the Minister said that the matter was under the consideration of the Ministry of Education and he would urge them to expedite measures in this connection.

In regard to the trachoma control scheme, Shri Karmarkar said that survey work had been completed and a trachoma map of India would soon be ready. They were now taking measures for spreading the network for treatment of the disease.

He agreed with some members that it was necessary to enact a law to regulate private nursing homes and that he would have the matter expedited.

The Committee discussed the smallpox epidemic in Delhi. The Minister told the members that he had issued instruction to the Directorate-General of Health Services to carry on continuous study of the problem. The increased trend of the disease began from the week ended November 26, 1960, and reached the peak in the week ended January 7, 1961. During this period the total number of cases was 665 with 165 deaths. The Minister said that a pilot project as part of the preparatory measures for eradication of smallpox was started in Delhi in November 1960. The Project aimed at covering the entire population.

The provision in the Drugs Act for regulating the sale of spurious drugs was explained at the meeting and it was stated that the amendment to the Act making punishment stringent (imprisonment of one year) was having good effect.

Tuberculosis Hospital in Vizag

The administrative block of the Tuberculosis Hospital and the Infectious Diseases Hospital was declared open by Mr. A. V. Phariojirao, M.L.A., Chairman of the Municipal Council, Visakhapatnam on 4-3-1961.

Mr. P. Narsingarao in his report referred to the donations of Rs. 60,000/- by the Caltex Oil Refinery. He thanked all who gave handsome donations for the project.

Protest Against Levy on Patent and Proprietary Medicines

Manufacturers of drugs and medicines in the City of Madras at a meeting on March 4 passed resolutions protesting against the levy of 10 per cent on patent and proprietary medicines, not containing alcohol. The levy, the resolution stated, was not only exorbitant, but was also likely to create administrative difficulties to the drug industry which was in its infancy in the country. The cost of production might go up by 25 per cent, which might necessitate a rise in the price of medicines. The levy, the resolution said, had caused inconvenience to the industry as well as to the public by the stoppage of movement of essential medicines. It was decided to send a deputation to meet the Collector of Customs in this regard.

CORRESPONDENCE

The Editor is not responsible for the views expressed by correspondents

Mental Effects of Ligation and other Sterilisation Operations

SIR,—I congratulate Dr. Nagendranath De on the attention he has drawn of the medical profession, to the importance of seeking consent of the female partner prior to ligation operations in his article (*J. Indian M. A.*, **36**: 95, 1961). There are however a few points in the article which need clarification and some, even contradiction.

Since sterilisation in the male is becoming more popular and is (in fact) being encouraged by Government agencies, it is imperative that a detailed psychological assessment and counsellling of both partners should precede the operation in the male. I consider that after-effects of sterilisation in the male such as mild depression, diffidence and inferiority feelings, jealousy, functional impotence and neurasthenic syndromes occur more frequently than the psychological after-effects of sterilisation in the female as enumerated in the article.

Hemphil and Reiss, who have worked for over twenty years in U.K. on the problems of mental disorders related to pregnancy and puerperium, have conclusively shown that the number, frequency, history of mental illness in the family (except manic-depressive psychoses) or even the history of mental illness during previous pregnancy or puerperium have no significant bearing on the chances of having mental illness in the subsequent pregnancy or puerperium. Hence, no well-informed psychiatrist would advise sterilisation of the female merely on the basis of these considerations. However, Hemphil and Reiss have observed that patients who had previous attacks of psychoses (especially schizophrenia) unrelated to their previous pregnancy or puerperium, are more prone to have relapses during these periods on subsequent occasions. In a few of such cases, it is possible that the strain of ligation operation might also precipitate a psychotic breakdown. However, this fact should not discourage us from advising this operation. It is better to risk a psychotic breakdown in a planned pregnancy and puerperium that is conducted under psychiatric assistance and ends up in ligation, rather than leave out such cases to face equal chances of psychotic breakdown in an unplanned pregnancy and what is more, leave the newborn uncared for by a psychotic mother.

An impression is gained from the article, as if the paternal instinct of men and women have one and only method of satisfying itself and that is by procreation. Stoppage of procreation would lead to repression of the instinct and ultimately "invasion of the unconscious to the conscious mind" would lead to "loss of reality sense of the mind". Such vague statements and naive simplification of biological adjustments, do not help us in knowing about psychotic process.

First of all, psychosis is now-a-days known to result from a subtle derangement of the biochemical processes of the brain and related organs and its causality, and course have to be understood by concepts different from those of neuroticism (H. J. Eysencx). Secondly, paternal instinct is not merely restricted to genital relations ending in childbirth, but, by a process of sublimation it is channelised into diverse fields that are socially acceptable, and conducive to human happiness.

In the same tenor, the author has made statements and a case report (Case 4) purporting that hysterical symptoms arise because of inhibited sexual (meaning sensual-genital) relations and there is exacerbation of hysterical conversion symptoms after ligation operations in the female . . . . "symptoms have reappeared with a

vengeance where there was no hope of any further childbirth". None of these old concepts are true of all hysterical disorders.

I may also point out that in an emotionally immature lady (as in Case 4) anxiety about the operation and its after-effects may by themselves bring about reappearance of symptoms that reflect childish and inadequate response of seeking dependance and security. And for this, one need not try to discover "reasons" in the "loss of her chances of childbirth". Such speculations for a mother of six appears to be a bit over-stretched, especially 9 years after the last childbirth and ligation?

Involutional depression or involutional melancholia is no longer held to be related to sex-hormonal deficiency. It is just a syndrome comprising of agitation and depression. Ligation has neither been shown to set in early hormonal deficiency nor is it known to be causally related to "involutional depression" (better known as agitated depression).

The categorisation of women (showing psychological after-effects of ligation) into four groups, seems to have more or less similar set of symptoms. Then, what purpose is served by grouping them when there is nothing further to show them that they differ in their clinical course or in prognosis?

Lastly, I feel, it is necessary for the specialists to be cautious, while cautioning others, about a particular practice. In the absence of any reliable statistical data or controlled, matched experiments, it is very difficult to state whether a factor is of causal significance or merely happens to be coincidental. And, it is not enough to speculate on the mechanism of an abnormal pattern of response, one has also to reason why there are so many normal or healthy responses. I am, etc.,

Irwin Hospital
New Delhi — SUBIR DUTTA ROY

* * * *

I thank the correspondent for the interest he has taken in my article, Mental Effects of Ligation and other Sterilisation Operations (*J. Indian M. A.*, **36**: 95, 1961). The correspondent has insisted that a detailed psychological assessment and counselling of both partners should precede the operation in the male, and he has mentioned some after-effects of male sterilisation. This however is not the subject matter of my article which is limited to the mental effects of sterilisation operations on the female.

In his first sentence the correspondent has mentioned that I have drawn the attention of the medical profession on the importance of seeking consent of the female partner prior to ligation. But I wrote in a subsequent para that asking the consent of the wife is not all, because though a woman who is a mother of several children might assert with the whole strength of her conscious mind that she did not want any more children, it was never the word of her inner (unconscious) mind which greatly resented a radical operation like ligation, which gives a death blow to her parental instinctive desire to have more children.

The correspondent has mistaken parental instinct for paternal instinct. The context in which the term has been used refers to the mother, so it cannot be paternal. There are two aspects of parental instinct—one the care and affection for children and the other, the desire to have more children. Sterilisation causes a big frustration to this latter aspect of the instinct. It is not that the parents must procreate for the satisfaction of their parental instinct, but they must have the idea that they can procreate whenever they wish. Sterilisation operation marks a death blow to this instinct when the mother "realises that she cannot have any more children by any means throughout the rest of her life". This frustration does not occur when other methods of contraception are used.

Psychoses may or may not result from "a subtle derangement of the biochemical processes of the brain and related organs", but there is no doubt that a psychic frustration results sooner or later in many cases into a psychotic breakdown.

Categorisation of women suffering from psychological after-effects of sterilisation operations into groups is useful from two points of view. First, the symptoms are somewhat different in the different categories, secondly, what is more important, the incidence of the mental effects is different in different categories. I admitted that there was no statistics. The categorisation will help the future workers in this line who will collect statistical data to find the incidence of cases in the different categories.

In the involutional cases the sterilisation operation acts only as a precipitating factor. Involutional depression is not the same thing as agitated depression. Depression apart from the involutional type may be agitated and all involutional depressions are not agitated.

Hysterics are all emotionally immature persons. In the reported case of the hysteric (Case 4) it was never stated that the exacerbation of hysterical conversion symptoms arose because of inhibited sexual relations. Anxiety about the operation and its after-effects are not responsible for the reappearance of symptoms, for in that case symptoms would reappear immediately after the operation and not nine years afterwards. They took such a long time because the reason was in the unconscious instinctive level and took time to come up.

Calcutta — NAGENDRANATH DE

A Case of Snake Bite (Cobra)

SIR,—Miss S., aged about 8 years was brought to Hindusthan Aircraft Hospital at about 2 A.M. on 24-5-60 with a history of snake bite. The child was conscious and complained of severe pain in the left foot. She had a tight ligature applied 2 inches above the left ankle joint.

Two puncture wounds, stained with blood, were seen in the middle of the sole of the left foot. A bluish patch of skin was visible below the left ankle.

When the child was put on the table, she showed signs of nausea and vomiting. The patient was dull and apathetic, and later showed signs of collapse, slow

pulse, slow and shallow respiration, paralysis of limbs and loss of conjunctival reflex. The respiration stopped, and the heart beats slowed down to 50 per minute.

Treatment—Deep horizontal incisions were made freely just below the ligature and at the site of the bite. Polyvalent anti-snake-venom, 5 ml., was injected intramuscularly. Another 5 ml. of the serum was injected into the right external jugular vein.

Within a short time the child started breathing, became conscious and complained of pain in the left lower limb. After 25 minutes the child showed signs of relapse and respiration stopped. Immediately, 10 ml. of the anti-serum was injected into the left external jugular vein. Oxygen inhalation was given, and artificial respiration was started. After 5 minutes the child started slow breathing and showed signs of recovery. The child was then admitted into the general ward.

After two days, signs of wet gangrene appeared along the line of the long saphenous vein from the site of the bite up to the incision. This became extensive. After a week, a slough about 2"×5" came off. Another patch of slough appeared on the lateral side of the left foot below the lateral malleolus. The wounds healed slowly by granulation and scar formation.

The cobra which had bitten the child was about 6 ft. long. Evidently, the polyvalent serum which was given intravenously, was able to neutralise the neurotoxin, and save the patient. I am, etc.,

Hindusthan Aircraft Ltd. Hospital, Bangalore

B. J. MAGDUM, M.B.B.S.
Senior Medical Officer

REVIEWS

Genetic Concept for the Origin of Cancer, Annals of the New York Academy of Sciences, Vol. 71, Art. 6, Sept. 30, 1958; Editor in Chief—Otto V. St. Whitelock; published by the Academy; 9"×6", pp. 807-1241; $5.00.

This is a monograph containing papers presented at a conference on the Genetic Concept for the Origin of Cancer held in Bethesda, Md., U.S.A., Oct. 25-26, 1957, and supported conjointly by the New York Academy of Sciences and the National Advisory Cancer Council, National Institute of Health, and the Public Health Service.

This monograph deals with the historic aspect of the problem, observations on the different aspects of the problem at the various centres in U.S.A. and one paper from Guy's Hospital, London, England dealing with the general survey of methods used in the study of genetics of human cancer. The publication of contributions on various facts of a problem in a single volume is welcome for the workers in the field as this helps them to modify the techniques and even, sometimes, the concept of a certain aspect of the problem. The volume will be of much help to those who are busy in finding out the place of genetics in the origin of cancer.

R. DUTTA CHOUDHURI

Neoplastic Disease at Various Sites: Introductory Volume, A Clinical Prospect of the Cancer Problem—By D. W. Smithers, General Editor. 1960, E. & S. Livingstone Ltd., Edinburgh and London; 10"×7", pp. xvi+232; 37s. 6d.

This book consists of eleven chapters and a general summary. The bibliography at the end of each chapter is adequate. This volume seems to be an attempt to set out the case against the most generally agreed views regarding cancer and to present a clinical approach towards the expression of a more embracing theory. The author emphasises the fact that the process of vegetative reproduction, regeneration, malformation and neoplasia have much in common. He points out that cancer is nothing but a part of a gradation in several behaviour patterns manifested in the tissues as they respond to their environmental changes and expressed in terms of cellular activity which has no sharp distinction from others which are not named cancer. The author has supported his viewpoint by tables and figures which include illustrative photomicrographs from tissue sections. During recent years interest has considerably grown in the fields of chemotherapy of cancer and much is being expected from this treatment. Here again he very ably points out that the chemotherapeutic drugs have been experimented on transplanted tumours in animals but these tumours are quite unlike spontaneous ones which may grow rapidly and some tissues become very large in relation to total volume of the host and make a great metabolic demand. Their action is not specific for a particular tissue and is still too indiscriminate on dividing cells in general.

The author has presented some thought-provoking problems in this volume. Every worker in the field of cancerology whether a clinician or a research worker should read this book and it is sure they will get many a point to ponder over.

R. DUTTA CHOUDHURI

OBITUARY

Dr. Y. P. Seth

Dr. Yesh Pall Seth, aged 37 years, died of cancer of the stomach all of a sudden at Balrampur Hospital, Lucknow on 31-1-1961.

He joined the Public Health Department of the Uttar Pradesh State in 1950. He had been a very popular, active and energetic worker in the subordinate Public Health Service. Dr. Seth held the office of the Municipal Medical Officer of Health, Pilibhit, when he died. The deceased left behind his old mother, his wife and three minor children.

DR. Y. P. SETH

SUPPLEMENT
Journal of the Indian Medical Association

VOL. 36, No. 8 CALCUTTA APRIL 16, 1961

XXVII MYSORE STATE MEDICAL CONFERENCE, 1960, MANIPAL

The twentyseventh Mysore State Medical Conference was held at Manipal on October 7-9, 1960. The Udipi branch of I.M.A. and Kasturba Medical College were the hosts. Nearly 200 delegates from all over the state attended the conference. The conference was held in the Physiology Block of Kasturba Medical College.

WELCOME ADDRESS

On the morning of October 7, 1960 Dr. T.M.A. Pai, President of the Indian Medical Association, Udipi Branch and Registrar of the Academy of General Education welcoming the gathering said, "We feel highly privileged to have this opportunity of playing host to this conference and to all the distinguished medical men who have come as delegates and we consider it very kind of you to have accepted this venue and given the young Medical Association Branch of Udipi and this seven year old Medical College an opportunity to have the weighty deliberation of this conference conducted here.

We are indeed proud that the Minister for Health of the Government of Mysore, is inaugurating this conference. We are equally proud that the exhibition is being inaugurated by the Director of Medical Services for the State, Dr. V. R. Naidu.

We have been able to get eminent persons to preside over our symposia. We extend our sincere thanks to Dr. B. N. Purandhare of Bombay for having agreed to preside over the Midwifery session, Dr. R. J. Borges of the Tata Memorial Hospital, Bombay, to preside over the Surgery session and Dr. Ratnavelu Subrahmanyan of the Madras Medical College to preside over the Medicine session. We are also indeed grateful to Dr. M. V. Krishna Rao, Founder of the Kakinada Medical College to have come here to participate in the symposium on Medical Education. We are also grateful to all the other eminent doctors who are attending this conference and those who have agreed to read papers and participate in these symposia."

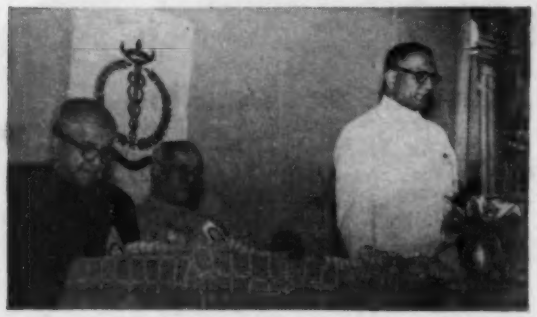
INAUGURAL ADDRESS

Dr. K. K. Hegde inaugurating the Conference, said *inter alia* "I am a great believer in the value of such annual conferences. They are useful in promoting a spirit of comradeship and also serve as a forum for the exchange of our thoughts and experiences for our common advantage and the ultimate good of 'the patient'—the most important person we are concerned with as medical men and for whose welfare, we are working.

Medicine is a lifelong study. Conferences such as this, provide opportunities to refresh our knowledge and to add to it. They may be looked upon as a collective "brain dusting" operation, which Osler had told us long back as essential for every medical man, and to supplement individual 'brain dusting' that we do when we quietly sit at home after a day's hard work and read a medical journal or book. Every medical man should attend at least one annual conference every year and spend at least half an hour every night to read a medical journal or a book. This is one simple way of way of keeping ourselves in touch with the advances in medical sciences and practice.

To-day we are living in an age when man has almost conquered space and is on the verge of setting out to new worlds. The advances in the field of medicine have been remarkable, particularly the discovery of Antibiotics, Hormones and Radio-active Isotopes, both for use in treatment as well as in the understanding of disease processes. Thoughts of such newer methods of curing and controlling diseases make us feel happy. But when we ponder to what extent the common man of our country is provided with the fruits of these newer knowledge it makes us a bit unhappy.

DR. T. M. A. PAI, CHAIRMAN, RECEPTION COMMITTEE WELCOMING THE DELEGATES AND GUESTS. IN THE PICTURE (*R—L*) ARE SEEN DR. V. R. NAIDU, DR. M. AUDHIKESAVALU, DR. K. K. HEGDE AND DR. G. V. JOSHI.



DR. K. K. HEGDE, MINISTER OF HEALTH, MYSORE STATE, INAUGURATING THE CONFERENCE.

The pattern of diseases prevalent in our State and in our country is the pattern that was prevalent in the western countries of the world, some centuries ago, i.e., at the beginning of the Industrial Revolution in Europe. We do know that ecologic factors are at work. If we want to change this pattern of disease, we must take bold steps to alter human ecologic factors. Malaria, tuberculosis, small-pox, leprosy, venereal diseases, filariasis and under-nourishment are our major public health problems that face our State. You will agree with me that these are mostly of a preventable nature. But we must take adequate measures to eradicate these scourges from our midst. In the western countries of the world today, these plagues have been virtually wiped out and their public health problems are the so-called diseases of civilisation, namely, cardio-vascular diseases, cancer and mental illness.

Today as our major health problems are preventable, emphasis on public health activity is inevitable and is the first charge on a civilised country. The Public Health Department of our State has a creditable record of service. In the interests of proper co-ordination of activities relating to public health and curative services, it has become necessary that the Public Health and Medical Departments have to be amalgamated. This was recommended by the Bhore Committee and has also been accepted in principle by the Health Ministers' Conference. This has been approved by the State Government and the objective will be reached in stages. In pursuance of this policy all the dispensaries and hospitals in the State at the Taluk level and below, have been transferred to the control of the Public Health Department with the exception of only 46 institutions which have certain special facilities. Ultimately, even these institutions and the district headquarters hospitals may come under the unified control of Medical and Health Services.

Our State has already achieved a large measure of success in the control of malaria through the National Malaria Eradication Programme which was started in 1958 and will continue in the Third Plan at an estimated cost of 150 lakhs of rupees. Mysore State has also been pioneering in undertaking experimental surveillance procedures in the country and it was gratifying to mention that two batches of 96 officers belonging to several States of India were deputed for undergoing an orientation course in malaria surveillance procedures, recently organised at Mysore.

Small-pox and cholera are two important communicable diseases which continue to be major health problems of the state. A pilot scheme for the eradication of smallpox has been taken up in Bijapur district as a preliminary step in launching a State wide campaign as part of a national programme which is expected to be completed during the Third Plan period at a cost of 5 lakhs of rupees.

There are several tuberculosis schemes, the most important of which is the setting up of four more domiciliary T. B. treatment teams. At the same time, the bed strength in Sanatoria is being increased and more T. B. Clinics will be established at district headquarters. The B.C.G. Vaccination Scheme will soon cover the entire State. A 180 bedded Sanatorium was opened at Kolar at the beginning of this year. About 100 isolation beds for advanced T.B. cases have been provided in different places. In addition to this the Government have launched a scheme to rehabilitate the non-infectious and cured T.B. patients. A total of Rs. 74 lakhs is proposed to be allotted for T.B. Schemes during the Third Plan period.

For the establishment of additional Leprosy Control Centres and the continuation of existing ones, a total of 30 lakhs of rupees is proposed to be provided during the Third Plan period. Similarly for the control of Filariasis, a sum of Rs. 5 lakhs is provided.

The school-going children constitute a third of our population. A new scheme is that of providing school health services. It is proposed during the Third Plan to set up 80 teams to cover the entire primary school student population. Rs. 50 lakhs is proposed to be provided for this purpose.

Family planning centres: So far 20 Urban and 58 Rural Family Planning Centres have been sanctioned. During the Third Plan, 9 additional Urban Centres will be opened so that all district hospitals will have family planning centres attached to them and in addition 60 Rural Centres will also be opened.

There is a programme of providing additional equipment to major hospitals. A 1000 M.A. X-ray Plant was commissioned for service at Victoria Hospital, Bangalore, quite recently. Additional beds in hospitals attached to the Medical Colleges at Bangalore, Mysore and Hubli will be provided. A new scheme for the Third Plan is the establishment of Blood Bank in every District Hospital and a Central Unit at Victoria Hospital for Bangalore. There is a programme for opening more Dental Clinics in the State. It is proposed to establish 10 more General Hospitals and purchase 50 more ambulance vans for the use of district and general hospitals.

It is proposed to establish dispensaries of the Health Unit type, one for every 15,000 of the population. 175 more such dispensaries need to be so established and 164·50 lakhs of rupees is provided for the purpose. It is expected that every Community Development Block will have a Government of India Pattern Health Unit.

There is also a proposal for establishing 6 more District Laboratories so as to cover the entire State with one full-fledged laboratory for every district and 5 more propaganda units for health education.

Of the Health and Sanitation Schemes for which 1,525·00 lakhs of rupees have been provided, the most important is the National Rural Water Supply and Sanitation Programme. It is proposed to see that there is no village without a drinking water well. As first priority 6,200 wells will be constructed in 6,200 villages, which do not have a single well at present. There is also a proposal to convert all the 2,400 step-wells in the State to draw-wells, so as to prevent the spread of diseases, like guinea worm.

The scheme of honorary medical officers was introduced in 1958 with this prime purpose of solving the shortage of personnel—to some extent. I am glad to say that this scheme is working satisfactorily."

Then the outgoing President of the Indian Medical Association, Mysore State branch, Dr. M. Authikesavalu installed the insignia on Dr. Joshi as the President of the Indian Medical Association, Mysore State Branch.

PRESIDENTIAL ADDRESS

Dr. G. V. Joshi in his presidential address said, "An independent professional association like ours has a definite place in the structure of our democracy although

there appear to be a few doubts in some quarters about the utility and function of a body like ours. If we look at other democratic countries of the world, we find that each one has a National Medical Association of its own and every one of them is serving a useful purpose in the welfare of the nation. Likewise we also have an important part to play in the future development and welfare of our country.

It is our object not only to guard the interest of the profession but to maintain the dignity, the integrity and the ethical standards of the members of the profession. We are active participants in the welfare of our country and as such have a part to play in measures relating to Public Health, Medical Relief and Medical Education. It is gratifying to note that the Union and the State Governments have been giving a greater recognition year by year.

Medical relief: Under the changing pattern of administration and social structure, the Government's role in medical care has been extending day by day, very likely with the ideal of complete nationalisation of medical services in view. Such an ideal is obviously unattainable in any democratic set up. Even in the United Kingdom which has made considerable progress in this direction, the private medical profession continues to exist and prosper and exercises a strong influence over the policies of the Government. The private medical profession has its own dignity to maintain which primarily depends on the integrity and the standard of service rendered by its members.

Government control of medical relief has its own drawbacks and disadvantages. What could easily be achieved in a simple patient-doctor relationship with entire satisfaction to both the parties is made difficult and at times impossible due to red-tapism, even under the most liberal administration. There is also a special danger in such a system in a country which has a democratic government based on alignments of political parties. I refer to the misuse that the ruling party is likely to make of schemes of medical relief for purposes of propaganda in favour of its own party. Luckily in our town state such a condition has not yet come to pass.

It is the primary duty of any administration to provide medical relief of a desired standard to all those who need it. For such a system to be efficient it should have the least administrative bottlenecks. It is also essential to prevent political opportunists from taking advantage of such a service. It is next to impossible to be able to provide all these amenities through the regular medical services only. It is therefore necessary that the private medical profession is taken into confidence and the best use of its members is made in elaborating and working schemes of medical relief and public health. It is in this sphere that the Indian Medical Association and its State and Local Branches would be of immense help. We on our part have promised all co-operation and active support to the governments concerned in this respect. I wish and hope that they decide to make use of our services to a greater extent than what is being done now.

Rural medical relief has been a difficult problem in our country. The medical profession is blamed for not being willing to go the villages. In a report by a Committee of the Central Government the problem has been categorically dealt with in the following words. "It has been said that rural people cannot get physicians because there are no hospitals and cannot get hospitals because there are no physicians and may be cannot get either because of the lower per capita wealth or income.

It is noted that more than 90 per cent of the doctors are concentrated in urban areas with less than 20 per cent population. It is also seen that the proportion of persons per doctor in urban areas is a little over a thousand persons per doctor whereas in rural areas it is forty-five thousand persons per doctor. The great discrepancy in the provision of personnel, facilities, and services for rural areas compared with the urban and the disadvantages under which rural population labours, are well brought out by these figures. It is alleged by some that such a state of affairs has come to pass because of the closure of the Licenciate Courses. It seems to be forgotten that till about five years ago the Licenciate courses were in existence and even today the number of Licentiates in the country is more than the Graduates. The handicaps that confront the Graduates in moving to the rural areas are equally applicable to the Licentiates. The advances in Medical Science have been so rapid that it is definitely retrogade to think of a lower standard of qualification. In any case the basic qualification for joining a Medical Course can not be reduced. The Medical course itself is beyond any curtailment. The expenditure in a Medical School also, cannot be appreciably less. Considering all these factors I fail to understand how the opening of a Licenciate course is likely to help in rural medical relief. It is learnt that the Government of Mysore is intending to start a few Medical Schools. I take this opportunity of expressing very strongly the inadvisability of such a step.

Several solutions to set right this maldistribution have been thought of and schemes, such as subsidised medical practitioners, rural dispensaries and rather inadequate health centres, have been tried. Solutions varying from inducement to compulsion have been suggested. What is probably essential is the real understanding of the causes, why doctors are not attracted to the rural areas? Apart from economic factors, the others are, lack of ordinary amenities of life and more particularly lack of facilities for the satisfactory practice of the profession. It is very easy to blame a medical man for not moving to the villages. May I know as to what is the inducement offered to him in this respect? No other officer belonging to the government services is expected to go and settle in a village; and why should a medical man be expected to do so? on the other hand the little that a medical man is able to do for the rural population, inspite of all the handicaps is not appreciated. Before a medical man could be expected to move to a rural area and settle there, it is essential that facilities for approaching the place throughout the year, and a social circle befitting his condition is established. I would like to know as to what have the community development centres and the N.E.S. Blocks been able to do in this matter.

An immediate, though partial, solution of the problem of rural medical relief may be, the establishment of mobile units with a chain of hospitals of different strengths and facilities at various places, with arrangements for transhipment of patients speedily, when necessary, and establishment of stationary health units wherever conditions are suitable. It would be cheaper to enlist the co-operation of the private medical profession in this respect than employing full time paid staff for all the units in the beginning.

Medical relief for the industrial worker is taking shape in all the states. In our state the Employees State Insurance Scheme is worked, as a full time paid service, through the Medical Department envisaging an expenditure of Rs. 22,00,000—during the budget year 1960-'61. The Indian Medical Association and its branches have been recommending the adoption of a Panel system for these schemes and it has been found by experience that the Panel System is more efficient and cheaper in the long run. I would therefore strongly recommend to the government to reconsider the matter before further extending of this scheme and to convert it into a Panel System, wherever possible.

I am glad to note that the Government of Mysore has allocated a sum of Rs. 5,43,24,200/- for Medical Relief, Public Health and Medical education in the budget year 1960-'61, out of a total revenue of Rs. 89,89,12,000/- which amounts to nearly 6 per cent of the income.

This includes the expenditure on the indigenous systems of medicine. We cannot expect the Government to spend much more than what is budgeted for. But it would be our responsibility to see that this money is well spent and maximum return for the same is assured.

Medical personnel: The availability of qualified medical personnel has been a difficult problem not only in this country but also in many other countries. The further extension of facilities for medical education has to be considered in the light of the requirement to fulfill the reasonable minimum ratio of physicians to population. It is estimated that the number of qualified medical men in scientific medicine, in this country today is roughly about 76,000, out of which about 70,000 are active in the field. This gives us roughly a proportion of one medical man for every 5,500 of the population. If we consider the distribution between the rural and the urban population, it works out at one medical practitioner for every 1,400 in the urban areas and one for every 45,000 in the rural areas. This is indeed an astounding state of disproportionate distribution. The figures cited above do not, however, give a complete picture of the state of things as they do not include the practitioners of indigenous systems of medicine and the unqualified persons practising medicine. If we were to take these figures into consideration the proportion will have to be revised considerably. This has resulted in a peculiar state of affairs wherein the official figures make it appear necessary that we require a large number of new medical graduates to be able to serve the population reasonably efficiently on the one hand and on the other the newly qualified graduates find it difficult to maintain themselves on their earnings. Unless the above condition is remedied quickly, we will have to face a situation wherein having a medical qualification, would be a disadvantage compared to the practice of medicine without any such qualification.

It has been repeatedly pointed out by the Indian Medical Association that the governments concerned should make up their minds once for all as to the type of medical men they require and enforce the attainment of at least a minimum standard of qualification before one is allowed to practise medicine. Political forces however seem to be influencing the powers in other directions and no definite stand is taken in the matter. I for one, do not maintain that it should be the monopoly of modern medicine as it is understood today to be the only cure for all diseases. I do however insist that anybody wanting to practise medicine should necessarily have the basic scientific knowledge as imparted to the student of modern medicine, as to what type of "Pathy" he practices afterwards should be left to his choice and judgment.

Coming to the conditions in our own state, we have an estimated population of 2,25,00,000 with the number of qualified medical men ranging somewhere about 3,800 or so, giving us roughly a proportion of one medical man to an average of 7,000 population. It is therefore clear that we fall short even of the low national average. Estimating that about 2 per cent of these practitioners are annually rendered inactive, we require 75 new graduates every year to replace the old ones. We now have in this state 4 medical colleges imparting medical education, having a total admission of about 350 students per year. On a liberal calculation we will thus have about 320 new graduates every year after having made a necessary allowance for a small number of about 30 people being unable to complete their studies for one reason or the other. Out of the 320, 75 would be absorbed in replacing the existing practitioners. We are thus left with a net increase of 245 new graduates added to the profession every year. These persons will be useful in bettering the patient to doctor proportion of the existing population as well as the normal increase, that is likely to occur during the course of years. It is thus apparent that we will require one more or preferably two more medical colleges in the state to improve the conditions of medical relief. It is obviously not healthy to increase the number of admissions in the existing colleges.

Medical education: The above reference brings me to the question of medical education in this state. Out of the four colleges referred to above, one is conducted by an independent body and the standard of education imparted there is reported to be satisfactory. As regards the Government owned colleges, I am sorry to say that the affairs are not in a very happy state. These State Branch has submitted a memorandum and also waited in deputation on the Chief Minister for the improvement of the government of medical colleges. We were assured by the Chief Minister that all attempts at improvement would be undertaken forthwith. But even after passage of months, things do not seem to have improved. I admit that there are difficulties in the way. I am however not yet convinced that these difficulties are unsurmountable.

The Health Minister of The Government of India is taking a keen interest in the medical education in the country and a recent report published by them lays down some basic principles which are: "In the educational programme of a medical college the quality of the faculty and its attitude toward and interest in education are more important than the exact organisation of the curriculum. The quality of education which it makes available to its students depends in a large measure upon the character and competence, the vision and conviction of the faculty. It is absolutely essential therefore that the college attracts, holds and develops as many able and devoted teachers as possible. The problem of teacher recruitment and replacements is becoming more acute with the increase in the number of medical institutions. What is required first of all is a nation-wide effort to create working conditions and an atmosphere more conducive to the intellectual growth and the pedagogical efficiency of the faculties with a determination to take whatever steps may be necessary and feasible to build up faculties of the requisite quality and character.

The question of including pre-university and pre-professional courses in the medical curriculum itself is yet a matter on which differences of opinion exist. In this State some of the institutions have already included the pre-professional course in the Medical College and it would be worthwhile watching the result of this step. The selection of students for admission to a medical college is today based mostly on the academic career as ascertained from the results of examinations, of course, with necessary reservations, community-wise in some cases. It is admitted that such a selection may not be all that is desired for. But unfortunately we have no other easy and simple means of selection. I would however like to mention here the system adopted by the Christian Medical College, Vellore, who have their own battery of tests. There are written tests in general knowledge, general ability, natural science, physics, chemistry, English usage, English comprehension and aptitude. From the candidates selected in the preliminary written tests, a certain number is selected for interview. The final interview tests consist of (1) outdoor task, (2) group discussion, (3) lecturette, (4) individual task, (5) emergency interview and (6) indoor task. These tests indicate the personality, character, leadership qualities, motivation and drive etc. I am sure you will agree that this is a very complicated process and may not be possible in every institution. It is however claimed by the Vellore College that their selection procedure has been quite successful and that it has reduced the number of years lost per student by ½ and reduced the number of failures in written examination by ⅓. It is clear therefore that there is a need for further experiment and evaluation of the methods of admission. It will very likely be possible to have tests covering a variety of fields by the objective method. As regards the method of examinations as presently carried out, it is agreed on all sides, that it makes the whole curriculum and teach-

ing examination centred. Students pay attention only to what is required in the examination. In the end these examinations result in a test of memory than a test of knowledge. It is high time that the Universities devise and adopt certain additional methods of testing the knowledge of a student.

The scope of medical studies has increased enormously during the last 25 years and it is next to impossible to accommodate all the syllabus in a short period of four or five years. On the other hand a further extension of the period of studies would result only in a losing race between the subjects to be studied and the number of years allotted for the course. It is therefore necessary that the student should be encouraged to supplement the teaching with information gathered by him through the use of a library suitable for undergraduates and a good Director who would guide them in the proper use of the library.

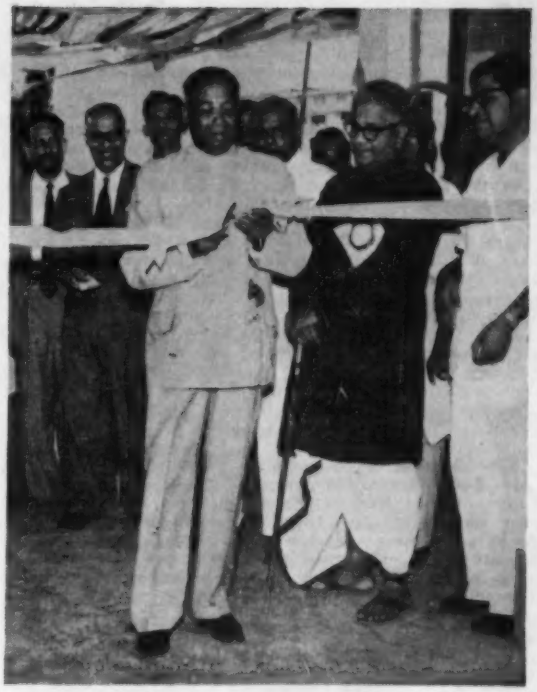
If we intend developing the indigenous sources of drugs, it is necessary that a Medical College is equipped with a research laboratory capable of experimenting on locally available drugs and chemicals. I personally feel that each medical college should also have a workshop manned by technical men who would work under the guidance of the institution in manufacturing and maintaining the equipment and ancilliaries required.

My only wish is that we of this profession continue to serve the community to the best of our ability without detriment to our honesty, integrity and the ethical standards, irrespective of whether our services are appreciated or otherwise. I have attempted not to find fault with the existing conditions, but only indicated the directions in which they need improvement. I depend upon the co-operation of each and every one of you in achieving this subject of service."

Symposium Held

Dr. V. R. Naidu, Director of Medical Services inaugurated the exhibition on the afternoon of October 7, 1960. A Symposium on medical education was also held under the presidentship of Dr. V. R. Naidu, Director of Medical Services, Mysore State. Dr. T. M. A. Pai, Registrar, Kasturba Medical College, Dr. R. P. Koppikar, Dean and Professor of Anatomy, Kasturba Medical College and Dr. M. Anthikesavalu, Principal and Professor of Surgery, Bangalore Medical College participated in the Symposium. Dr. T. M. A. Pai spoke on "How to bring down the cost of Medical Education". Dr. M. Anthikesavalu spoke on "How to expand medical education so that rural areas get the benefit of medical relief. Dr. R. P. Koppikar, spoke next on "How to have more doctors with existing facilities".

Dr. V. R. Naidu winding up the Symposium said—"One of the things that was stressed was the failure of a large number of students. Some of us have been in the medical colleges for very many years and we have often found that the type of students that we select were not up to the mark as it is in the western countries. In the United States, the average age of a student at the time of admission to a medical college is somewhere between 20 and 22 and very often, you will find that most of them are M.Scs. and some others even Ph.Ds. In England, most of the students are M.As., a special degree in one of the science subjects. In addition, they have knowledge in Sociology, Economics, Philosophy and other knowledge also. Here we select students who have just completed pre-university courses who are about 16, make the age 17 by various means and then we have also to select students on communal basis, on regional basis, on sex basis and so on. Therefore, our students are of a poor type to start with. Secondly, I definitely say that our examinations are really of not much use in getting the best students ont of the medical colleges. I still believe in the American system of tutorial examination, and I have had an opportunity to be in one of the American universities as a teaching staff member.



Dr. V. R. Naidu, Director of Medical Services, Inaugurating the Medical Exhibition.

So I could tell you how exactly the examinations are conducted there. They have occasional examinations and the performance of each student is recorded in a register. This is all totalled up at the time of the final examination and about the end of the year, you would know which of the students would be able to pass the courses. If some of them should fail, they will be given one more opportunity to appear for the supplementary examination in August or September. If they should once again, fail, they are out of the college whether they are in the second year or third year or final year of the course. With the fear of being ousted if they fail, the students develop a tendency to study hard throughout their career and this has resulted in the reduction of the number of failures. I think a similar step is quite essential in our universities also because when the students know that they have to leave off their course if they fail, they would never slacken in their duty and work hard and apply continuously to their studies.

Unless we produce a surplus of doctors, it is not possible to send them to the rural parts.

I can tell you that it is better in the interests of the public and in the interests of the institutions that the Medical colleges are built up in a place which is likely to be an industrial centre and this would make available a big labour population who will provide a good deal of clinical material for the students to diagnose and analyse during their training period in the college. They will have varieties of cases to deal with which would make them efficient doctors.

I entirely agree that the responsibility of starting medical colleges could not be part and parcel of the duties of the government alone. You may be aware that in the United States and in some other foreign countries, the majority of the medical colleges are run by private or co-operative enterprises and I think we

must congratulate Dr. Pai for having initiated one of the pioneer types of colleges. He has been very successful in his venture and I feel that for private medical colleges, the government must encourage them by giving 50 per cent of the expenditure incurred by them.

On October 8-9, 1960 the Scientific Sessions were held. The Surgery Session was presided over by Dr. Borges of the Tata Memorial Hospital. A Symposium on Bladder Neck Obstruction was held and then a number of papers were read on the 7th evening. Dr. Borges gave a talk on "Surgery of the Oesophagus" illustrated by a 16 mm. colour film taken in his hospital. The Midwifery Session was presided over by Dr. Purandere. A Symposium on "Bleeding During The Later Months of Pregnancy" was held, followed by reading of a number of papers. Dr. Purandere gave a lecture on Cancer Cervix illustrated by slides. Dr. R. Subrahmanium gave a lecture on "Treatment of Hypertension" and then presided over the scientific session on Medicine in the afternoon. A symposium on "Atherosclerosis" was held. After the symposium a number of papers were read.

RESOLUTIONS

The following resolutions were passed :

1. The contemplated move of the Government of Mysore to open Medical Schools has been received with grave concern by the medical profession in general and members of this association in particular. This association earnestly requests the government not to resort to the contemplated move but to have a uniform standard of qualification.

2. The Government may kindly be requested to start the condensed M.B.B.S. course in all the Medical Colleges in the State under their control and encourage all licentiates to become graduates. The Medical Council of India be requested to extend this facility to the Mysore State at least for a few years more, as the course in Mysore Medical College was started only this year.

BRANCH NOTES

ANDHRA PRADESH STATE BRANCH—A meeting of the Provincial Council was held on 25-2-61 at Kakinada with Dr. P. S. Giri in the chair. Thirty members were present. Resolution expressing sorrow at the demise of the following members during the year was passed, members standing : 1. Dr. K. Mohan Rao, Nellore, 2. Dr. Seshadri Reddy, Proddatur, 3. Dr. B. Venkata Rao, Warrangal, 4. Dr. N. C. Iyengar, Warrangal, 5. Dr. Mallayya, Hyderabad, 6. Dr. Sanyasi Raju, Samalkot, 7. Dr. M. C. Satyanarayan, Vizianagaram, 8. Dr. P. Krishnamurty, Vizianagaram.

At the commencement of the meeting Dr. A. S. Puntambekar raised a point of order as to the position of members coming to the Provincial Conference Meeting with letters of authorisation from their branch Presidents nominating them in the place of Pradesh Council members unavoidably absent. During the discussion the parallel position with regard to Central Council Members in the Central constitution was cited. That there is no such provision in the Pradesh Constitution was agreed, and it was felt that if members desired alteration of the rules on the lines of the Centre, the Constitution could be suitably amended according to the prescribed procedure. The President gave a ruling that until the Constitution was amended to this effect, these credentials are invalid. Minutes of the Pradesh Council Meeting of 27-2-60 were adopted. Annual reports of the Pradesh Branch was adopted. Audited accounts of the branch for the period ending 15-2-61 was adopted.

The services of the secretaries of the following branches in increasing their membership was placed on record with appreciation : East Godavari, Nellore and Secunderabad. Audited accounts of the Andhra Pradesh Medical Journal were approved.

Dr. V. K. Rajarama Rao, on behalf of the Anantapur branch invited the Vth Andhra Pradesh Medical Conference at Anantapur in 1962. The invitation was accepted with thanks by the Council. Dr. J. V. R. Sarma, was elected as secretary of the branch for 1960-61; Dr. A. V. Ramamurthy as hony. joint secretary and treasurer; Dr. N. Satyanarayana as hony. joint secretary, Andhra University Region; Dr. M. V. R. Acharlu as hony. joint secretary, Osmania University Region; Dr. A. Srinivasulu as hony. joint secretary, Sri Venkateswara University Region; Dr. A. V. Ramamurthy as Editor, Andhra Pradesh Medical Journal; Dr. I. Chandrasekhar as joint Editor, Andhra Pradesh Medical Journal.

Two representatives of the State branch on the Central Working Committee :

Dr. R. S. Reddy, delegate; alternate Dr. P. S. Giri.

Dr. M. Vasudeva Rao, delegate; alternate Dr. Rajasekhar Rao.

BANARAS BRANCH—At a general meeting held on 14-3-61, a resolution condoling the death of Pt. Govind Vallabh Pant and conveying their condolence to the family of the deceased was passed.

BAREILLY BRANCH—A meeting of the executive committee was held on 20-2-61. Seventeen members were present. Reports of the various sub-committees were discussed. It was decided that the conveners of different committees be informed officially by the secretary outlining their task. Dr. Dhillon apprised the members of the Library and Journal sub-committee activities. It was decided that the Bulletin be published monthly and a Bulletin Committee was formed. An appeal was made to attend the forthcoming Zonal Conference.

The Zonal Conference was held at Moradabad on 5-3-1961. Thirty one medical practitioners and servicemen and all members of the branch attended the Conference. After the usual programme, the inaugural address was delivered by Dr. P. N. Wahi of Agra. A very interesting scientific programme was gone through, the chief speakers were Dr. P. N. Wahi, Dr. S. P. Srivastava, Dr. Katari, Dr. M. L. Sharma, Dr. K. S. Mathur, Dr. Bhalla, and Dr. O.P. Jaiswal.

BHOPAL BRANCH—A clinical meeting of the branch was held on 6-3-61. The meeting was attended by 37 doctors. Dr. M. M. Arora presided.

Dr. M. Kumar, Professor of Surgery, Gandhi Medical College, Bhopal, gave a talk on "Aortography". He showed a large number of x-ray plates of patients in whom aortography was done and stressed the importance of aortography as a diagnostic aid in selected cases.

Dr. R. K. Shrivastava showed a case of Lung Abscess right-upper lobe in whom lobectomy was done by him. The histological diagnosis was of Bronchiectasis, while the clinical and radiological diagnosis was of lung abscess. Dr. Shrivastava pointed out the rarity of Bronchiectasis affecting the right upper lobe.

BOKARO BRANCH—The annual general meeting was held on 6-1-61 under the presidentship of Dr. S. K. Das Gupta. The meeting commenced with a demonstration by Dr. Das Gupta of a case of Hypospadias in a child one month old. Twelve members were present. The following office-bearers for 1960-61 were elected : Dr. P. R. Bhattacherjee—president; Dr. H. N. Roy—vice-president; Dr. S. K. Nandi—secretary; Dr. R. N. Roy—treasurer; Dr. S. N. Banerjee—member, central committee; Dr. R. N. Roy—member, Bihar State Council.

BOMBAY TERRITORIAL BRANCH—The annual report of the branch for 1959-60 shows that the Territorial Council met 10 times during the year. The membership strength increased from 1077 to 1096 at the close of the year on 30-9-1960. During the year the Bombay Branch celebrated its Silver Jubilee on 20-22 February, 1960, so the annual conference of the Territorial Branch was postponed to a later date (26-27 November, 1960). Dr. K. K.

Datey from this branch attended the XIV General Assembly of the W.M.A. The All India Leprosy Conference was held at Bombay on 14-18 December 1960 and the branch participated in it. Dr. S. Wand, Chairman and Dr. D. P. Stephenson, Secretary, B.M.A. visited Bombay on 12-14 November, 1959. Dr. C. O. Karunakaran, Past President, I.M.A. paid a visit on 14-15 November, 1960. The Indian Science Congress was held in Bombay on 3-9 January, 1960 and the branch sent representatives to the same. In 1959-60, Dr. R. V. Sathe was elected president for the next year. The branch arranged 4 clinical and scientific meetings during the year.

Office-bearers of the branch for 1960-61 were elected with Dr. C. L. Jhaveri as president ; Dr. Arvind M. Shah and Dr. K. V. Jhatakia as vice-presidents; Dr. R. K. Shah as hony. treasurer; Dr. M. A. Panwala as hony. secretary; Dr. A. D. Daftary and Dr. D. S. Munagekar as hony. joint secretaries.

BONGAIGONG BRANCH—At an emergency meeting held on 4-3-61 a resolution condoling the death of Dr. Sadananda Majumder, a member of the branch, and conveying sympathy to the deceased's family, was adopted.

COIMBATORE BRANCH—A monthly meeting was held on 25-2-1961. Ninety members were present. Dr. D. Sundareswaran presided. Dr. C. R. Subramaniam delivered a lecture on Selective Gastric Surgery for Duodenal Ulcer Patients and the Problem of Recurrent Ulceration.

DARBHANGA BRANCH—At a meeting held on 6-2-61 under the presidentship of Dr. S. Hoda a resolution condoling the death of Dr. S. K. Sinha, Chief Minister of Bihar, was adopted. Copies of the resolution was sent to the State Governor and to the members of the bereaved family.

FEROZEPORE BRANCH—An ordinary meeting of the branch was held on 19-3-61 at the Railway Hospital. Dr. M. L. Sach Dev presided. Dr. Sach Dev spoke on Sluggish Lever. Dr. H. S. Ahluwalia, Ferozepore Division N. Rly., demonstrated cheap and modern contraceptives and spoke on family planning.

GORAKHPUR BRANCH—The monthly meeting of the branch was held on 23-2-1961. Major J. N. Jaswal presided. Dr. T. N. Saha presented cases of Congenital Pyloric Stenosis, Rickets and Lymphadenopathy. Dr. Kedar Nath presented 3 cases of Volvulus treated by primary resection and anastomosis, a case each of V.V.F. and Spina bifida. Dr. S. D. Tayal presented a case of Peripheral Gangrene in low out-put heart failure. Major J. N. Jaswal and Dr. R. P. Srivastava gave talks on Benzene Poisoning and Anaesthesia respectively.

HAZARIBAGH BRANCH—The annual general meeting of the branch was held on 16-2-1961. Fourteen members were present. Dr. J. N. Sen presided. The annual report and the accounts were adopted. Office-bearers for 1960-61 were elected with Dr. J. N. Sen as president; Dr. H. K. Verma as vice-president ; Dr. P. K. Roy as hony. secretary; Dr. J. N. Singh and Dr. A. K. Ghosh as hony. joint secretaries; Dr. B. Chatterjee as hony. auditor; Dr. H. K. Verma and Dr. S. N. Roy as representatives to the Provincial Council and Central Council respectively. A provisional District Health Committee was formed.

The annual report of the branch for 1959-60, shows slight increase in membership. Three general meetings and 3 sub-committee meetings were held during the year. The Health Week was observed from 29-2-60 to 6-3-60. On 1-3-1960, a baby show was held; on 2-3-1960 physical feats were shown by the students of the reformatory school. Altogether 3024 persons were vaccinated against smallpox. Four hundred students were inoculated TABC. Health of 336 students were examined. On 3-3-1960 lectures on refresher course were delivered by Dr. R. V. P. N. Sinha of Patna Medical College and Dr. B. B. Prasad of Patna.

JAMNAGAR BRANCH—A meeting was held on 7-2-1961. The following films were shown (1) Corticosteroids, (2) Resuscitation for cardiac arrest and (3) Kenacort.

A meeting was held on 21-2-1961. 29 members were present. The following clinical cases were demonstrated. (1) A case of Suprapubic Fistula due to Carcinoma of Urinary Bladder which in turn developed as a result of stone in bladder for over 20 years. This patient was demonstrated with x-rays and biopsy slide by Dr. H. L. Patel. (2) A case of Sudden Pain and inability to use the right shoulder joint; x-ray was shown and the case was left for discussion by the house. Several suggestions were made. At the end, Dr. K. S. Shah, who presented this case, showed another x-ray which indicated the diagnosis of early tuberculosis of the right humerus. (3) A case of Nodular Goitre with pressure symptoms and Myxoedema, probably Cretinism, by Dr. G. H. Upadhyaya. (4) A case of Round Cell Sarcoma by Dr. H. C. Shaha. A biopsy histopathology slide was shown. (5) An x-ray of double prolapsed intervertebral (myelography) discs was shown by Dr. S. N. Shah. (6) X-rays of a patient with tuberculosis of lungs were shown by Dr. S. M. Baxi. The second x-ray was taken after some time during which the patient was treated by antitubercular drugs. Cortisone was given for a short while by the physician, but due to some misunderstanding the patient continued the same (25 mg. daily) for a long time. As a result the second x-ray showed a number of cavities in both lungs. The question of use and misuse of corticosteroids was discussed. (7) Dr. S. R. Parikh gave a follow-up of the case he presented in meeting held on 28-1-61. The stones numbering 38 were removed and prolapse repaired. The kidneys showed return of function. The x-rays (pyelography) were shown.

Two meetings were held of the Constitution Committee comprising of Dr. M. V. Rajapurkar, President; Dr. H. L. Patel and Dr. V. S. Chudasama, Jt. Hon. Secretaries; Dr. H. J. Nansey, Hon. Treasurer; Dr. S. M. Boxi and Dr. K. L. Mehta, Members. The amended constitution was finalised to be put before the General Body of the Branch.

The Branch took up the work of School Health Examination at the request of the District Health Officer. During the month of February 1278 children were examined out of whom 272 showed one or more defects, which were notified to the parents.

KANPUR BRANCH—Foundation Week was celebrated by holding Seminars of different subjects on February 25 and 26, 1961 at the Temple of Service. The detailed programme was as follows :

25th February (Chairman Dr. K. N. Gaur) : Postgraduate medical training by Dr. M. M. Singh, Adviser, Rockefeller Foundation in India; Prolonged Pyrexia of Obscure Origin by Dr. D. Paul; Recent advances in diagnosis and treatment of Myocardial Infarction by Dr. S. C. Jain; on 26th February (Chairman Dr. C. B. Singh) : Management of Urinary Tract Infections by Dr. K. N. Gaur; Epilepsies—diagnosis and management of by Dr. B. L. Agarwal; Recent advances in the management of Congestive Heart Failure by Dr. K. K. Sicca; Dr. M. L. Mehrotra on Tuberculosis problem and concept of its control.

KARIMNAGAR BRANCH—The monthly clinical meeting of the branch was held on 11-3-61 at the Christian Mission Hospital, Karimnagar with Dr. Ahmad Hussain, Superintendent and District Medical Officer in the chair.

Dr. John of Mission Hospital presented a nervous case describing briefly the signs and symptoms and invited the members for a discussion on the diagnosis of the case. After a brief discussion by the members the president felt the case to be a case of Cerebrovascular syphilis and advised anti-syphilitic treatment.

Dr. C. S. Mazthy, Asst. Dental Surgeon of the Headquarters Hospital, Karimnagar demonstrated a case where he has successfully implanted the upper central

incisors which were lost while playing a hockey match and the lost teeth were brought to the Hospital immediately after the accident. Post implanted teeth were shown by skiagram.

Dr. Manoharamma of the Mission Hospital presented a case of Sacral Tumour giving rise to signs of intestinal obstruction.

K.G.F. BRANCH—The monthly clinical meeting was held on 17-2-1961. Twentyfive members were present. Five films were shown at the meeting.

KOTHAGUDIUM BRANCH—A special clinical meeting in honour of the President, Andhra Pradesh Branch, Dr. P. S. Giri, was arranged on 17-2-61, for the benefit of lay people. Members and local practitioners with their wives and several other eminent persons attended. Dr. T. C. Ramchandani, President of the branch welcomed Dr. Giri and guests.

Dr. Ramchandani demonstrated cases of Fracture Femur operated on by him with Smith-Peterson tri-flanged pin. Dr. S. V. Ghurye spoke about Heart Disease—Coronary Thrombosis from the Layman's viewpoint. Dr. H. M. Jagannatha Rao on the pathology of the disease and other factors in the Treatment of Coronary Thrombosis. Mr. S. Venkataraman, Senior Electrical Engineer, who had an attack recounted his experiences from the patients point of view. Dr. (Mrs.) Din gave a talk on Emergencies in Pregnant Women. Dr. S. Vaidyanathan presented two donors who had donated blood a dozen times each. Dr. Giri presented them medals for their services.

This was followed by a dinner. Dr. Ramchandani proposed a toast to surgeons of the past. Shri S. K. Nargundkar spoke appreciatively of the meeting. Dr. Giri made a suitable and neat reply. The meeting closed with a vote of thanks by Dr. B. Das, Secretary of the branch.

LABAC BRANCH—The annual general meeting was held on 26-2-1961. Twelve members were present. Dr. H. K. Chakraborty presided. The annual reports and the accounts for the year 1959-60 were adopted. Office-bearers for 1960-61 were elected with Dr. H. C. Paul as president; Dr. P. C. Sen Gupta as hony. secretary; Dr. S. K. Dutta as members of the State Council; Dr. P. C. Paul as member of the Central Council.

MASAURHI BRANCH—The following have been elected office-bearers of the branch for 1960-61 : Dr. L. B. Sinha—president; Dr. R. P. Sinha—secretary; Dr. A. P. Sinha—jt secretary; Dr. H. L. Dhar—representative to state council.

MEERUT BRANCH—At a meeting held on 9-3-61, a resolution was adopted condoling the death of Pt. Govind Ballabh Pant.

NAWADAH BRANCH—Anti-Leprosy Day was observed on 30-1-61 at the Nawadah Leprosy subsidiary centre. A public meeting was also held on 30-1-61 at the Nawadah Leprosy subsidiary centre. Dr. S. K. Pathak, Deputy Superintendent, Nawadah Sub-divisional Hospital, presided. Dr. J. M. M. Tuddu, Medical Officer, Nawadah Leprosy subsidiary centre, delivered a lecture on leprosy and the various measures taken by the Government to combat the disease. Lantern slides about leprosy were shown.

PUDUKKOTTAI BRANCH—A combined meeting of the Chettinad and Pudukkottah branches was held at Pudukkottah on 26-2-61. Dr. V. K. Ramachandran presided. After tea, two minutes silence was observed in memory of Dr. Kalyanasundaram who passed away at a very early age. Minutes of the previous meeting were read by the secretaries of both branches. Dr. V. Sreenivasan gave an interesting and lucid talk on Myocardial Infarction and answered questions put to him by the members. Dr. Govindarajan presented a case of Rhinosporidiosis and discussed the various clinical aspects and treatment of the condition. Dr. Subramaniam showed the operated specimen of Cystic Kidney. The case was shown to the members at a previous meeting. The meeting came to a close with a vote of thanks by Dr. N. Thigarajan, the secretary.

SURI BRANCH—Members of the branch in a meeting held on 3-2-1961 condoled and recorded their deep sense of sorrow at the death of Dr. Sourin Sen Gupta and Dr. Dhruba Gupta by which the medical profession sustained a great loss.

SWAI MADHOPUR BRANCH—The branch was organised on 23-12-1960. Dr. M. N. Aggarwal and Dr. J. C. Bhagi were elected president and secretary, respectively.

TARAKESWAR BRANCH—On 25-12-60 an ordinary general meeting was held. 25 members attended. Dr. Bijoy Ballav Karfa presided. Attention was drawn to State Government and I.M.A. Bengal Provincial Branch towards compartmentalism amongst medical men in Health Centre Services, professional fees while attending courts as witnesses and also towards granting of Rural medical allowances to unfortunate registered rural practitioners. Dr. Panchanan Nayek delivered a lecture on "Contraceptives", which was highly appreciated.

On 19-2-61 an ordinary general meeting was held at Tarakeswar Hospital premises at Tarakeswar. 17 members were present. Dr. Surendra Nath Mukherjee presided. Condolence resolutions regarding sad demise of Dr. Souren Sen Gupta and Dr. Shibapada Misra were passed. Dr. Bidhan Chandra Roy was congratulated on his receiving "Bharat-Ratna" award. Quarters of District Board Medical Officers, which are rotten, were a subject of discussion and a resolution was passed. Dr. Harisadhan Datta, delivered a refresher course type of lecture on "Blood Pressure". Some of the members including Dr. Sanjibon Roy Choudhury, Dr. A. B. Chatterjee and others took part in the discussion. The president discussed the subject in his presidential address.

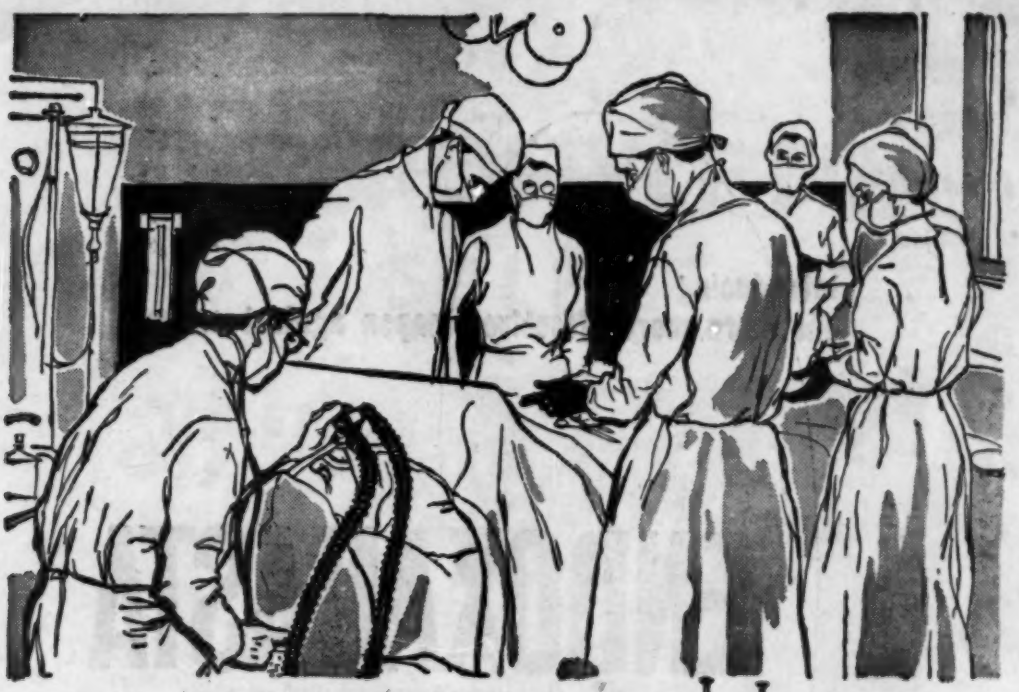
TIRUCHY BRANCH—A monthly meeting of the branch was held on 18-2-1961 Dr. P. V. Sundaram presided. Fortyfive members and 3 guests were present. The president introduced Dr. K. Vasudevan, Civil Asst. Surgeon, Government Headquarters Hospital. Dr. Vasudevan gave a talk on Appendicitis in Children. Dr. R. Ganesam, Hony. Asst. Medical Officer of the Government Headquarters Hospital spoke Sorakkai Ammai in Paediatrics.

UPLETA BRANCH—A special meeting of the branch was held on 26-2-1961 to bid farewell to Dr. K. W. Waghela, president of the branch on transfer. Nine members were present. The members spoke about his services to the association and the various activities of the branch which he initiated. Dr. Waghela in reply thanked them all for their co-operation.

XIII ORISSA STATE MEDICAL CONFERENCE, 1961, BERHAMPUR

The 13th Session of the Orissa State Medical Conference will be held at Berhampur (Khallikote College) on 13-14 May, 1961. This session will celebrate the Silver Jubilee of the Branch. A Souvenir will be published to commemorate the occasion. The scientific session will be held on 14-5-61. Arrangements for holding an Exhibition of Pharmaceutical preparations are also being made.

Further information may be obtained from Dr. M. V. Ramanayya, the organising secretary of the conference, Berhampur (Ganjam).



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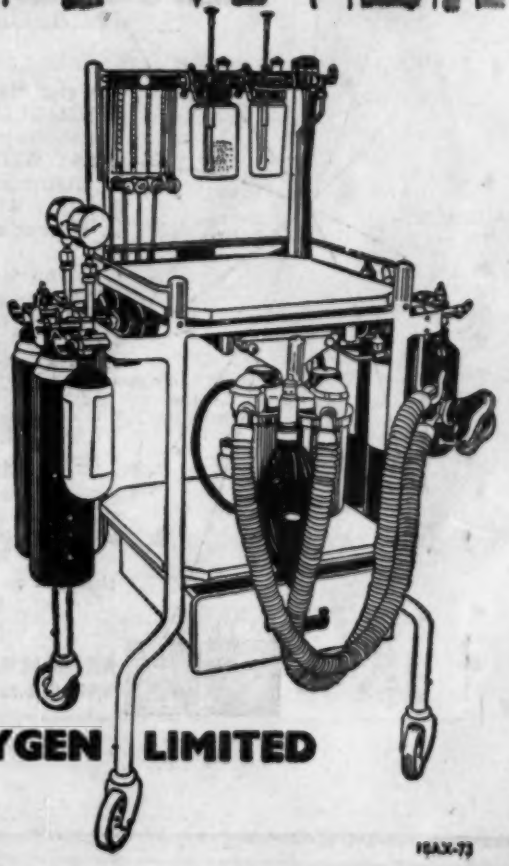

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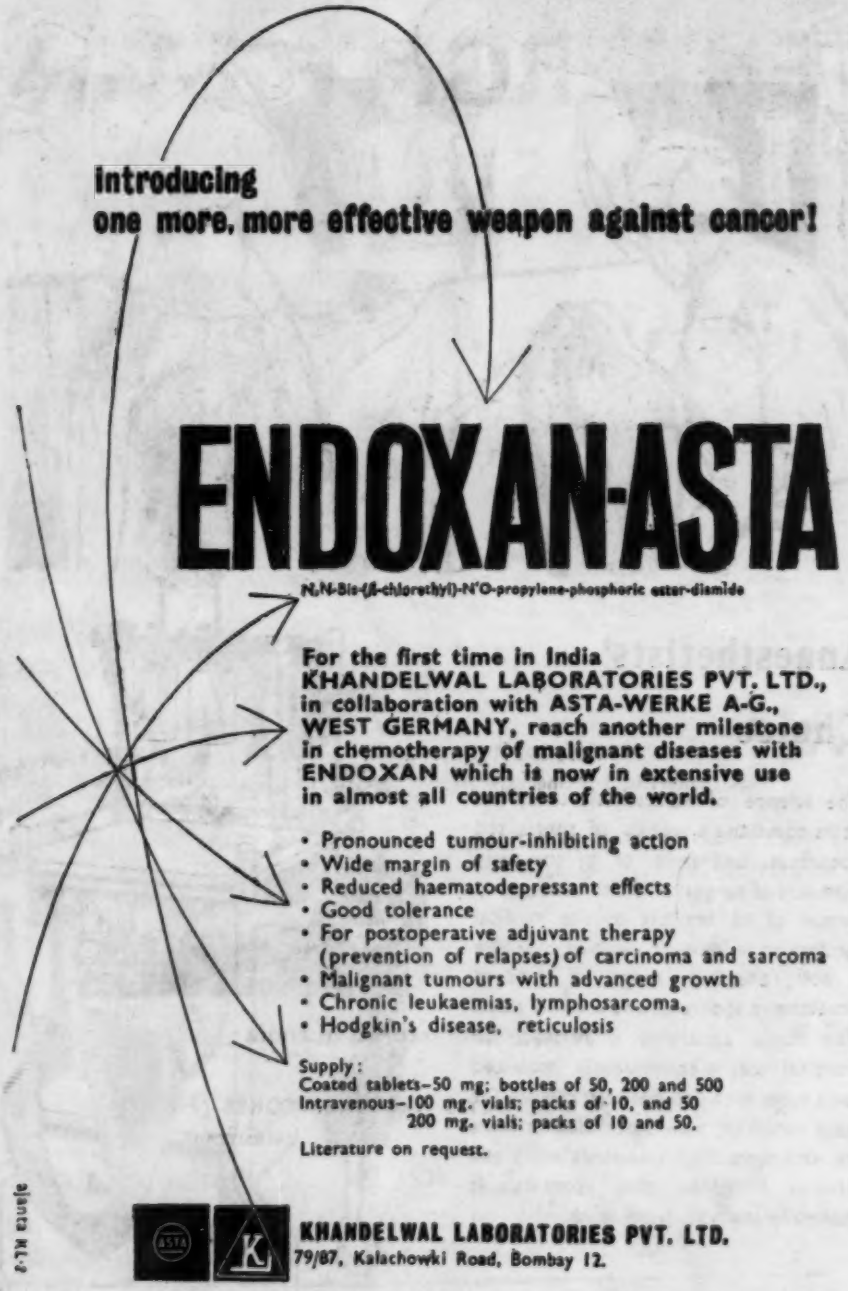

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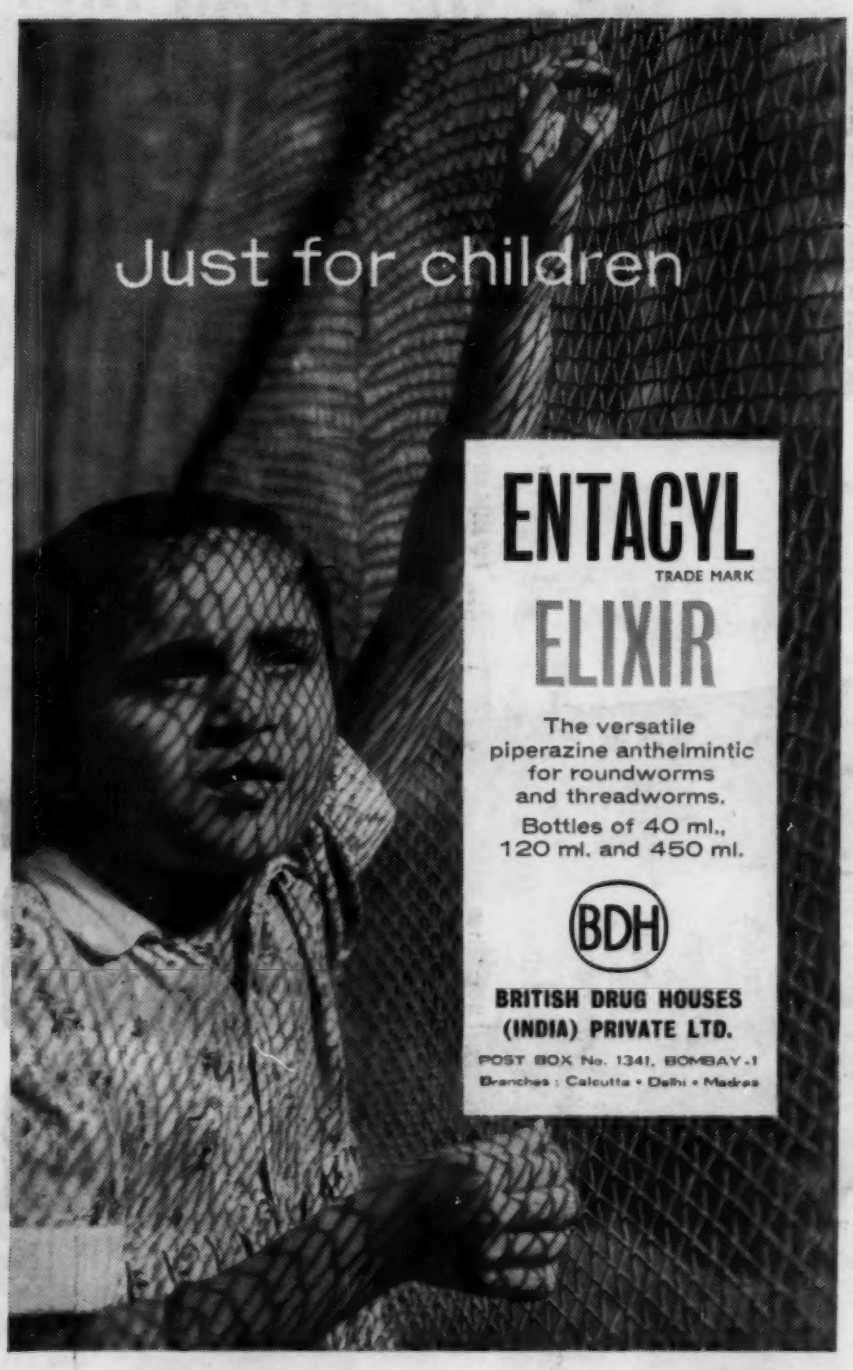
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